

Overview of materials for Polypropylene, Glass/Mineral Reinforced

Category : Polymer , Thermoplastic , Polypropylene (PP) , Polypropylene, Glass/Mineral Reinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polypropylene, Glass/Mineral Reinforced".

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-GlassMineral-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.05 - 1.52 g/cc	0.0379 - 0.0549 lb/in ³	Average value: 1.16 g/cc Grade Count:102
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 26.2 % Grade Count:26
Water Absorption	0.0100 - 0.300 %	0.0100 - 0.300 %	Average value: 0.0550 % Grade Count:30
Linear Mold Shrinkage	0.00100 - 0.0150 cm/cm	0.00100 - 0.0150 in/in	Average value: 0.00457 cm/cm Grade Count:96
Linear Mold Shrinkage, Transverse	0.00500 - 0.00900 cm/cm	0.00500 - 0.00900 in/in	Average value: 0.00770 cm/cm Grade Count:5
Melt Flow	1.00 - 30.0 g/10 min	1.00 - 30.0 g/10 min	Average value: 6.99 g/10 min Grade Count:66
Ash	30.0 - 35.0 %	30.0 - 35.0 %	Average value: 30.2 % Grade Count:26

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	53.0 - 70.0	53.0 - 70.0	Average value: 64.0 Grade Count:3
Hardness, Rockwell R	40.0 - 117	40.0 - 117	Average value: 88.3 Grade Count:52
Hardness, Shore D	73.0 - 79.0	73.0 - 79.0	Average value: 75.4 Grade Count:14
Tensile Strength, Ultimate	20.0 - 150 MPa	2900 - 21800 psi	Average value: 50.1 MPa Grade Count:83
	9.00 - 80.0 MPa @Temperature 60.0 - 120 °C	1310 - 11600 psi @Temperature 140 - 248 °F	Average value: 31.0 MPa Grade Count:2
Tensile Strength, Yield	20.0 - 75.8 MPa	2900 - 11000 psi	Average value: 47.2 MPa Grade Count:46
Elongation at Break	1.00 - 37.0 %	1.00 - 37.0 %	Average value: 6.20 % Grade Count:66
	2.90 - 2.90 %	2.90 - 2.90 %	

Mechanical Properties	Metric @ Temperature 80.0 - 80.0 °C	English @ Temperature 176 - 176 °F	Comments Average value: 2.90 % Grade Count:1
Elongation at Yield	2.30 - 100 %	2.30 - 100 %	Average value: 8.26 % Grade Count:32
Modulus of Elasticity	2.40 - 12.3 GPa	348 - 1780 ksi	Average value: 4.64 GPa Grade Count:45
	8.80 - 8.80 GPa @Temperature 80.0 - 80.0 °C	1280 - 1280 ksi @Temperature 176 - 176 °F	Average value: 8.80 GPa Grade Count:1
Flexural Yield Strength	31.0 - 220 MPa	4500 - 31900 psi	Average value: 77.7 MPa Grade Count:74
	120 - 120 MPa @Temperature 80.0 - 80.0 °C	17400 - 17400 psi @Temperature 176 - 176 °F	Average value: 120 MPa Grade Count:1
Flexural Modulus	1.88 - 11.4 GPa	273 - 1650 ksi	Average value: 4.43 GPa Grade Count:104
	0.600 - 7.80 GPa @Temperature 60.0 - 120 °C	87.0 - 1130 ksi @Temperature 140 - 248 °F	Average value: 3.05 GPa Grade Count:2
Compressive Yield Strength	39.3 - 62.1 MPa	5700 - 9000 psi	Average value: 50.7 MPa Grade Count:7
Izod Impact, Notched	0.250 - 6.00 J/cm	0.468 - 11.2 ft-lb/in	Average value: 0.723 J/cm Grade Count:95
	0.250 - 2.00 J/cm @Temperature -40.0 - 0.000 °C	0.468 - 3.75 ft-lb/in @Temperature -40.0 - 32.0 °F	Average value: 1.09 J/cm Grade Count:3
	2.1356 - 2.1356 J/cm @Temperature -28.9 - - 28.9 °C	4.0009 - 4.0009 ft-lb/in @Temperature -20.0 - - 20.0 °F	Average value: 1.09 J/cm Grade Count:1
	2.1356 - 2.1356 J/cm @Thickness 3.17 - 3.17 mm	4.0009 - 4.0009 ft-lb/in @Thickness 0.125 - 0.125 in	Average value: 1.09 J/cm Grade Count:1
Izod Impact, Unnotched	1.60 - 7.47 J/cm	3.00 - 14.0 ft-lb/in	Average value: 3.76 J/cm Grade Count:34
Izod Impact, Notched (ISO)	5.00 - 7.80 kJ/m²	2.38 - 3.71 ft-lb/in²	Average value: 5.53 kJ/m² Grade Count:6
	3.70 - 4.70 kJ/m² @Temperature -40.0 - - 40.0 °C	1.76 - 2.24 ft-lb/in² @Temperature -40.0 - - 40.0 °F	Average value: 4.03 kJ/m² Grade Count:4
Charpy Impact Unnotched	1.80 - 7.80 J/cm²	8.57 - 37.1 ft-lb/in²	Average value: 4.03 J/cm² Grade

Mechanical Properties	Metric 1.00 - 7.20 J/cm ²	English 4.74 - 34.3 ft-lb/in ²	Comments
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	Average value: 3.07 J/cm ² Grade Count:2
Charpy Impact, Notched	0.800 - 3.70 J/cm ²	3.81 - 17.6 ft-lb/in ²	Average value: 1.90 J/cm ² Grade Count:3
	0.500 - 3.90 J/cm ² @Temperature -30.0 - -20.0 °C	2.38 - 18.6 ft-lb/in ² @Temperature -22.0 - -4.00 °F	Average value: 2.20 J/cm ² Grade Count:2
Gardner Impact	0.339 - 4.52 J	0.250 - 3.33 ft-lb	Average value: 0.693 J Grade Count:22

Thermal Properties	Metric	English	Comments
CTE, linear	21.6 - 51.0 µm/m-°C	12.0 - 28.3 µin/in-°F	Average value: 39.9 µm/m-°C Grade Count:15
Thermal Conductivity	0.303 - 0.360 W/m-K	2.10 - 2.50 BTU-in/hr-ft ² -°F	Average value: 0.336 W/m-K Grade Count:9
Melting Point	163 - 182 °C	325 - 360 °F	Average value: 171 °C Grade Count:9
Deflection Temperature at 0.46 MPa (66 psi)	133 - 169 °C	271 - 336 °F	Average value: 152 °C Grade Count:91
Deflection Temperature at 1.8 MPa (264 psi)	35.6 - 155 °C	96.0 - 311 °F	Average value: 122 °C Grade Count:93
Vicat Softening Point	55.0 - 160 °C	131 - 320 °F	Average value: 111 °C Grade Count:6
Flammability, UL94	HB	HB	Grade Count:31
Oxygen Index	21.0 %	21.0 %	Average value: 21.0 % Grade Count:3
Glow Wire Test	650 - 750 °C	1200 - 1380 °F	Average value: 683 °C 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: 2.97e+16 ohm-cm Grade Count:16
Dielectric Constant	2.50 - 3.50	2.50 - 3.50	Average value: 2.94 Grade Count:11
Dielectric Strength	19.7 - 30.0 kV/mm	500 - 762 kV/in	Average value: 22.5 kV/mm Grade Count:15
Dissipation Factor	0.00200 - 0.00600	0.00200 - 0.00600	Average value: 0.00286 Grade Count:7
Arc Resistance	120 - 130 sec	120 - 130 sec	Average value: 125 sec Grade Count:11

Processing Properties	Metric	English	Comments
Processing Temperature	30.0 - 270 °C	86.0 - 518 °F	Average value: 208 °C Grade Count:20
Nozzle Temperature	54.4 - 243 °C	130 - 470 °F	Average value: 220 °C Grade Count:27
Melt Temperature	190 - 270 °C	374 - 518 °F	Average value: 225 °C Grade Count:38
Mold Temperature	26.7 - 90.0 °C	80.0 - 194 °F	Average value: 46.7 °C Grade Count:51

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