

Overview of materials for Polypropylene with Carbon Black Filler

Category : Polymer , Thermoplastic , Polypropylene (PP) , Polypropylene with Carbon Black Filler

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polypropylene with Carbon Black Filler".

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-Carbon-Black-Filler.php

Physical Properties	Metric	English	Comments
Density	0.947 - 1.10 g/cc	0.0342 - 0.0397 lb/in ³	Average value: 1.00 g/cc Grade Count:18
Water Absorption	0.0100 - 0.0300 %	0.0100 - 0.0300 %	Average value: 0.0167 % Grade Count:3
Thickness	102 microns	4.00 mil	Average value: 102 microns Grade Count:8
Linear Mold Shrinkage	0.0100 - 0.0200 cm/cm	0.0100 - 0.0200 in/in	Average value: 0.0146 cm/cm Grade Count:13
Melt Flow	0.400 - 35.0 g/10 min	0.400 - 35.0 g/10 min	Average value: 8.14 g/10 min Grade Count:9

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	96.0 - 99.0	96.0 - 99.0	Average value: 97.5 Grade Count:8
Hardness, Shore D	70.0 - 74.0	70.0 - 74.0	Average value: 72.3 Grade Count:8
Tensile Strength, Ultimate	16.5 - 32.0 MPa	2390 - 4640 psi	Average value: 23.4 MPa Grade Count:11
Tensile Strength, Yield	20.7 - 44.8 MPa	3000 - 6500 psi	Average value: 26.8 MPa Grade Count:7
Film Elongation at Break, MD	4.00 - 500 %	4.00 - 500 %	Average value: 252 % Grade Count:4
Elongation at Break	2.00 - 130 %	2.00 - 130 %	Average value: 23.0 % Grade Count:13
Elongation at Yield	7.00 - 12.0 %	7.00 - 12.0 %	Average value: 9.28 % Grade Count:5
Modulus of Elasticity	0.483 - 2.20 GPa	70.1 - 319 ksi	Average value: 1.31 GPa Grade Count:3
Flexural Yield Strength	20.7 - 48.0 MPa	3000 - 6960 psi	Average value: 30.0 MPa Grade Count:7
Flexural Modulus	0.965 - 3.10 GPa	140 - 450 ksi	Average value: 1.67 GPa Grade Count:17

Izod Impact, Notched Mechanical Properties	0.502 - 8.33 J/cm Metric	0.940 - 15.6 ft-lb/in English	Average value: 3.63 J/cm Grade Count:7 Comments
Izod Impact, Unnotched	1.00 J/cm - NB	1.87 ft-lb/in - NB	Average value: 7.43 J/cm Grade Count:7
Izod Impact, Notched (ISO)	1.50 kJ/m ² - NB	0.714 ft-lb/in ² - NB	Average value: 27.7 kJ/m ² Grade Count:10
	1.20 kJ/m ² - NB @Temperature -20.0 - - 20.0 °C	0.571 ft-lb/in ² - NB @Temperature -4.00 - - 4.00 °F	Average value: 5.84 kJ/m ² Grade Count:7
	1.20 kJ/m ² - NB @Thickness 4.00 - 4.00 mm	0.571 ft-lb/in ² - NB @Thickness 0.157 - 0.157 in	Average value: 5.84 kJ/m ² Grade Count:7
Izod Impact, Unnotched (ISO)	16.0 kJ/m ² - NB	7.61 ft-lb/in ² - NB	Average value: 48.7 kJ/m ² Grade Count:10
	9.00 kJ/m ² - NB @Temperature -20.0 - - 20.0 °C	4.28 ft-lb/in ² - NB @Temperature -4.00 - - 4.00 °F	Average value: 17.7 kJ/m ² Grade Count:7
	9.00 kJ/m ² - NB @Thickness 4.00 - 4.00 mm	4.28 ft-lb/in ² - NB @Thickness 0.157 - 0.157 in	Average value: 17.7 kJ/m ² Grade Count:7
Charpy Impact Unnotched	1.40 - 1000 J/cm ²	6.66 - 4760 ft-lb/in ²	Average value: 1.40 J/cm ² Grade Count:8
	0.500 - 999.9 J/cm ² @Temperature -20.0 - - 20.0 °C	2.38 - 4759 ft-lb/in ² @Temperature -4.00 - - 4.00 °F	Average value: 0.500 J/cm ² Grade Count:7
	0.500 - 999.9 J/cm ² @Thickness 102 - 102 mm	2.38 - 4759 ft-lb/in ² @Thickness 4.00 - 4.00 in	Average value: 0.500 J/cm ² Grade Count:7
Charpy Impact, Notched	0.300 - 5.00 J/cm ²	1.43 - 23.8 ft-lb/in ²	Average value: 2.44 J/cm ² Grade Count:8
	0.200 - 2.60 J/cm ² @Temperature -20.0 - - 20.0 °C	0.952 - 12.4 ft-lb/in ² @Temperature -4.00 - - 4.00 °F	Average value: 1.39 J/cm ² Grade Count:7
	0.200 - 2.60 J/cm ² @Thickness 102 - 102 mm	0.952 - 12.4 ft-lb/in ² @Thickness 4.00 - 4.00 in	Average value: 1.39 J/cm ² Grade Count:7
Film Tensile Strength at Break, MD	25.0 - 33.0 MPa	3630 - 4790 psi	Average value: 28.3 MPa Grade Count:4

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	74.0 - 149 °C	165 - 300 °F	Average value: 99.8 °C Grade Count:12
Deflection Temperature at 1.8 MPa (264 psi)	46.0 - 71.0 °C	115 - 160 °F	Average value: 55.8 °C Grade Count:13
Vicat Softening Point	80.0 - 156 °C	176 - 313 °F	Average value: 134 °C Grade Count:8

Electrical Properties	Metric	English	Comments
Electrical Resistivity	5.00 - 1.00e+9 ohm-cm	5.00 - 1.00e+9 ohm-cm	Average value: 7.19e+7 ohm-cm Grade Count:15
Surface Resistance	10.0 - 1.00e+9 ohm	10.0 - 1.00e+9 ohm	Average value: 6.72e+7 ohm Grade Count:17

Processing Properties	Metric	English	Comments
Melt Temperature	200 - 270 °C	392 - 518 °F	Average value: 229 °C Grade Count:11
Mold Temperature	32.2 - 80.0 °C	90.0 - 176 °F	Average value: 58.9 °C Grade Count:7
Roll Temperature	60.0 - 100 °C	140 - 212 °F	Average value: 80.7 °C Grade Count:5
Drying Temperature	60.0 - 82.2 °C	140 - 180 °F	Average value: 72.4 °C Grade Count:10
Injection Pressure	60.0 - 80.0 MPa	8700 - 11600 psi	Average value: 70.0 MPa Grade Count:4

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