

Overview of materials for Polycarbonate, Impact Modified

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Impact Modified

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate, Impact Modified". 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-Polycarbonate-Impact-Modified.php

Physical Properties	Metric	English	Comments
Density	1.02 - 1.43 g/cc	0.0368 - 0.0517 lb/in ³	Average value: 1.20 g/cc Grade Count:86
	1.02 - 1.02 g/cc @Temperature 280 - 300 °C	0.0368 - 0.0368 lb/in ³ @Temperature 536 - 572 °F	Average value: 1.02 g/cc Grade Count:6
Water Absorption	0.0900 - 0.400 %	0.0900 - 0.400 %	Average value: 0.236 % Grade Count:23
Moisture Absorption at Equilibrium	0.120 - 0.340 %	0.120 - 0.340 %	Average value: 0.161 % Grade Count:21
Water Absorption at Saturation	0.300 - 0.500 %	0.300 - 0.500 %	Average value: 0.361 % Grade Count:9
Viscosity	360000 - 380000 cP @Temperature 260 - 260 °C	360000 - 380000 cP @Temperature 500 - 500 °F	Average value: 370000 cP Grade Count:2
	360000 - 380000 cP @Shear Rate 1000 - 1000 1/s	360000 - 380000 cP @Shear Rate 1000 - 1000 1/s	Average value: 370000 cP Grade Count:2
Maximum Moisture Content	0.0200 - 0.0400	0.0200 - 0.0400	Average value: 0.0213 Grade Count:15
Linear Mold Shrinkage	0.00100 - 0.0300 cm/cm	0.00100 - 0.0300 in/in	Average value: 0.00641 cm/cm Grade Count:75
Linear Mold Shrinkage, Transverse	0.00300 - 0.0100 cm/cm	0.00300 - 0.0100 in/in	Average value: 0.00668 cm/cm Grade Count:19
Melt Flow	3.30 - 35.0 g/10 min	3.30 - 35.0 g/10 min	Average value: 14.6 g/10 min Grade Count:68

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	70.0 - 89.0	70.0 - 89.0	Average value: 82.7 Grade Count:3

Hardness, Rockwell R Mechanical Properties	111 - 122 Metric	111 - 122 English	Average value: 117 Grade Count:31 Comments
Ball Indentation Hardness	113 MPa	16400 psi	Average value: 113 MPa Grade Count:4
Tensile Strength, Ultimate	50.0 - 228 MPa	7250 - 33000 psi	Average value: 68.5 MPa Grade Count:33
Tensile Strength, Yield	51.0 - 138 MPa	7400 - 20000 psi	Average value: 61.5 MPa Grade Count:74
Elongation at Break	2.00 - 130 %	2.00 - 130 %	Average value: 77.1 % Grade Count:66
Elongation at Yield	4.00 - 90.0 %	4.00 - 90.0 %	Average value: 12.2 % Grade Count:29
Modulus of Elasticity	0.225 - 3.95 GPa	32.6 - 573 ksi	Average value: 2.28 GPa Grade Count:28
Flexural Yield Strength	68.9 - 179 MPa	10000 - 26000 psi	Average value: 91.2 MPa Grade Count:63
Flexural Modulus	1.91 - 8.27 GPa	277 - 1200 ksi	Average value: 2.54 GPa Grade Count:66
Izod Impact, Notched	0.785 - 9.08 J/cm	1.47 - 17.0 ft-lb/in	Average value: 5.97 J/cm Grade Count:64
	3.74 - 6.9407 J/cm	7.01 - 13.003 ft-lb/in	Average value: 4.02 J/cm Grade Count:10
	@Temperature -50.0 - 0.000 °C	@Temperature -58.0 - 32.0 °F	
	0.900 - 5.34 J/cm	1.69 - 10.0 ft-lb/in	Average value: 4.02 J/cm Grade Count:18
	@Temperature -40.0 - 0.000 °C	@Temperature -40.0 - 32.0 °F	
	0.900 - 5.34 J/cm	1.69 - 10.0 ft-lb/in	Average value: 4.02 J/cm Grade Count:18
	@Thickness 3.17 - 3.20 mm	@Thickness 0.125 - 0.126 in	
Izod Impact, Unnotched	5340 J/cm - NB	10000 ft-lb/in - NB	Grade Count:3
Izod Impact, Notched (ISO)	9.00 - 94.0 kJ/m ²	4.28 - 44.7 ft-lb/in ²	Average value: 54.4 kJ/m ² Grade Count:13
	7.00 - 40.0 kJ/m ²	3.33 - 19.0 ft-lb/in ²	Average value: 17.5 kJ/m ² Grade Count:7
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	14.0 - 16.0 kJ/m ²	6.66 - 7.61 ft-lb/in ²	Average value: 17.5 kJ/m ² Grade Count:4
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	14.0 - 16.0 kJ/m ²	6.66 - 7.61 ft-lb/in ²	Average value: 17.5 kJ/m ² Grade Count:4
	@Thickness 3.20 - 3.20 mm	@Thickness 0.126 - 0.126 in	

Izod Impact Unnotched (ISO)	Metric	English	Comments
Mechanical Properties			
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Grade Count:5
Charpy Impact Unnotched	1000 J/cm ² - NB	4760 ft-lb/in ² - NB	Grade Count:17
	999.9 J/cm ² - NB	4759 ft-lb/in ² - NB	Grade Count:10
	@Temperature -60.0 - - 30.0 °C	@Temperature -76.0 - - 22.0 °F	
Charpy Impact, Notched	3.00 - 7.00 J/cm ²	14.3 - 33.3 ft-lb/in ²	Average value: 5.50 J/cm ² Grade Count:6
	1.40 - 1.60 J/cm ²	6.66 - 7.61 ft-lb/in ²	Average value: 1.55 J/cm ² Grade Count:4
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	
	1.40 - 1.60 J/cm ²	6.66 - 7.61 ft-lb/in ²	Average value: 1.55 J/cm ² Grade Count:4
	@Thickness 3.00 - 3.00 mm	@Thickness 0.118 - 0.118 in	
Gardner Impact	36.0 - 36.2 J	26.6 - 26.7 ft-lb	Average value: 36.1 J Grade Count:7
Dart Drop, Total Energy	39.3 - 57.0 J	29.0 - 42.0 ft-lb	Average value: 49.1 J Grade Count:3
Falling Dart Impact	59.6561 - 59.6561 J	44.0001 - 44.0001 ft-lb	Average value: 59.7 J Grade Count:1
	@Temperature -28.9 - - 28.9 °C	@Temperature -20.0 - - 20.0 °F	
Puncture Energy	50.0 - 55.0 J	36.9 - 40.6 ft-lb	Average value: 51.5 J Grade Count:10
	55.0 - 60.0 J	40.6 - 44.3 ft-lb	Average value: 56.5 J Grade Count:10
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	48.0 - 74.4 μm/m-°C	26.7 - 41.3 μin/in-°F	Average value: 65.6 μm/m-°C Grade Count:26
CTE, linear, Transverse to Flow	59.0 - 78.1 μm/m-°C	32.8 - 43.4 μin/in-°F	Average value: 67.6 μm/m-°C Grade Count:15
Specific Heat Capacity	1.70 - 1.77 J/g-°C	0.406 - 0.423 BTU/lb-°F	Average value: 1.72 J/g-°C Grade Count:8
Thermal Conductivity	0.173 - 0.214 W/m-K	1.20 - 1.49 BTU-in/hr-ft ² -°F	Average value: 0.187 W/m-K Grade Count:12

Electrical Properties	Metric	English	Comments
	10.0 - 1.00e+17 ohm-	10.0 - 1.00e+17 ohm-	Average value: 1.60e+16 ohm-cm

Electrical Resistivity Electrical Properties	cm Metric	cm English	Grade Count:30 Comments
Surface Resistance	10000 - 1.00e+16 ohm	10000 - 1.00e+16 ohm	Average value: 2.17e+15 ohm Grade Count:26
Dielectric Constant	2.80 - 3.20	2.80 - 3.20	Average value: 3.05 Grade Count:14
Dielectric Strength	15.0 - 35.0 kV/mm	380 - 889 kV/in	Average value: 28.4 kV/mm Grade Count:20
Dissipation Factor	0.000400 - 0.0120	0.000400 - 0.0120	Average value: 0.00605 Grade Count:13
Arc Resistance	0.000 - 120 sec	0.000 - 120 sec	Average value: 86.7 sec Grade Count:6
Comparative Tracking Index	125 - 400 V	125 - 400 V	Average value: 213 V Grade Count:15
High Voltage Arc-Tracking Rate, HVTR	25.4 - 150 mm/min	1.00 - 5.91 in/min	Average value: 113 mm/min Grade Count:4

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