

Overview of materials for Polycarbonate-Urethane

Category : Polymer , Thermoplastic , Polyurethane, TP , Polycarbonate-Urethane

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.19 - 1.22 g/cc	0.0430 - 0.0441 lb/in ³	Average value: 1.21 g/cc Grade Count:8
Water Absorption	0.540 - 1.20 %	0.540 - 1.20 %	Average value: 0.878 % Grade Count:9
Molecular Weight	231000 - 262000 g/mol	231000 - 262000 g/mol	Average value: 250000 g/mol Grade Count:3
Linear Mold Shrinkage	0.00240 - 0.0386 cm/cm	0.00240 - 0.0386 in/in	Average value: 0.0145 cm/cm Grade Count:7
Linear Mold Shrinkage, Transverse	0.000 - 0.0300 cm/cm	0.000 - 0.0300 in/in	Average value: 0.0137 cm/cm Grade Count:4
Melt Flow	3.00 - 35.0 g/10 min	3.00 - 35.0 g/10 min	Average value: 15.6 g/10 min Grade Count:11

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	75.0 - 92.0	75.0 - 92.0	Average value: 83.6 Grade Count:7
Hardness, Shore D	55.0 - 75.0	55.0 - 75.0	Average value: 62.6 Grade Count:8
Tensile Strength, Ultimate	4.37 - 63.2 MPa	634 - 9170 psi	Average value: 46.7 MPa Grade Count:15
Tensile Strength, Yield	4.11 - 49.0 MPa	596 - 7110 psi	Average value: 20.5 MPa Grade Count:14
Elongation at Break	241 - 585 %	241 - 585 %	Average value: 395 % Grade Count:15
Flexural Yield Strength	0.945 - 70.3 MPa	137 - 10200 psi	Average value: 9.53 MPa Grade Count:10
Flexural Modulus	0.0192 - 1.79 GPa	2.78 - 260 ksi	Average value: 0.238 GPa Grade Count:10
Coefficient of Friction	0.410 - 1.52	0.410 - 1.52	Average value: 0.801 Grade Count:9
Tear Strength	64.9 - 237 kN/m	370 - 1350 pli	Average value: 134 kN/m Grade Count:4

Taber Abrasion, mg/1000 Cycles Mechanical Properties	5.70 - 31.0 Metric	5.70 - 31.0 English	Average value: 12.8 Grade Count:9 Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	93.2 - 161 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	51.8 - 89.3 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 138 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:4
Melting Point	162 - 180 $^{\circ}\text{C}$	324 - 356 $^{\circ}\text{F}$	Average value: 173 $^{\circ}\text{C}$ Grade Count:3
Vicat Softening Point	21.1 - 107 $^{\circ}\text{C}$	70.0 - 224 $^{\circ}\text{F}$	Average value: 72.4 $^{\circ}\text{C}$ Grade Count:9
Glass Transition Temp, Tg	-8.00 - 1.00 $^{\circ}\text{C}$	17.6 - 33.8 $^{\circ}\text{F}$	Average value: -3.00 $^{\circ}\text{C}$ Grade Count:3

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.70 - 5.00	3.70 - 5.00	Average value: 4.26 Grade Count:7
Dielectric Strength	14.2 - 24.6 kV/mm	360 - 625 kV/in	Average value: 18.2 kV/mm Grade Count:10

Processing Properties	Metric	English	Comments
Processing Temperature	180 - 232 $^{\circ}\text{C}$	356 - 450 $^{\circ}\text{F}$	Average value: 205 $^{\circ}\text{C}$ Grade Count:6
Die Temperature	174 - 238 $^{\circ}\text{C}$	345 - 460 $^{\circ}\text{F}$	Average value: 213 $^{\circ}\text{C}$ Grade Count:6
Melt Temperature	160 - 238 $^{\circ}\text{C}$	320 - 460 $^{\circ}\text{F}$	Average value: 208 $^{\circ}\text{C}$ Grade Count:10
Drying Temperature	71.1 - 116 $^{\circ}\text{C}$	160 - 240 $^{\circ}\text{F}$	Average value: 85.5 $^{\circ}\text{C}$ Grade Count:10
Moisture Content	0.100 %	0.100 %	Average value: 0.100 % Grade Count:6
Dew Point	-40.0 $^{\circ}\text{C}$	-40.0 $^{\circ}\text{F}$	Average value: -40.0 $^{\circ}\text{C}$ Grade Count:6

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