

Overview of materials for Polycarbonate/ASA Alloy, Unreinforced

Category : Polymer , Thermoplastic , ASA Polymer , Polycarbonate (PC) , Polycarbonate/ASA Alloy, Unreinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate/ASA Alloy, Unreinforced".

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-PolycarbonateASA-Alloy-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	1.10 - 1.24 g/cc	0.0397 - 0.0448 lb/in ³	Average value: 1.15 g/cc Grade Count:67
Water Absorption	0.200 - 0.900 %	0.200 - 0.900 %	Average value: 0.384 % Grade Count:11
Moisture Absorption at Equilibrium	0.150 - 1.00 %	0.150 - 1.00 %	Average value: 0.272 % Grade Count:26
Water Absorption at Saturation	0.600 - 1.00 %	0.600 - 1.00 %	Average value: 0.751 % Grade Count:19
Viscosity	138000 - 138000 cP	138000 - 138000 cP	Average value: 229000 cP Grade Count:1
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	
	275000 - 275000 cP	275000 - 275000 cP	
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	Average value: 229000 cP Grade Count:1
	275000 - 275000 cP	275000 - 275000 cP	
	@Shear Rate 1000 - 1000 1/s	@Shear Rate 1000 - 1000 1/s	
Linear Mold Shrinkage	0.00300 - 0.00900 cm/cm	0.00300 - 0.00900 in/in	Average value: 0.00557 cm/cm Grade Count:55
Linear Mold Shrinkage, Transverse	0.00500 - 0.00700 cm/cm	0.00500 - 0.00700 in/in	Average value: 0.00600 cm/cm Grade Count:8
Melt Flow	0.700 - 53.5 g/10 min	0.700 - 53.5 g/10 min	Average value: 18.2 g/10 min Grade Count:66

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	102 - 116	102 - 116	Average value: 110 Grade Count:16
Hardness, H358/30	63.0 - 98.0 MPa	9140 - 14200 psi	Average value: 86.3 MPa Grade Count:3

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	39.0 - 68.0 MPa	5660 - 9860 psi	Average value: 52.0 MPa Grade Count:43
Tensile Strength, Yield	45.5 - 66.0 MPa	6600 - 9570 psi	Average value: 57.9 MPa Grade Count:59
Elongation at Break	5.00 - 160 %	5.00 - 160 %	Average value: 64.8 % Grade Count:46
Elongation at Yield	3.00 - 130 %	3.00 - 130 %	Average value: 6.03 % Grade Count:45
Modulus of Elasticity	2.02 - 3.10 GPa	293 - 450 ksi	Average value: 2.52 GPa Grade Count:36
Flexural Yield Strength	60.0 - 100 MPa	8700 - 14500 psi	Average value: 85.4 MPa Grade Count:49
Flexural Modulus	1.89 - 2.96 GPa	274 - 430 ksi	Average value: 2.47 GPa Grade Count:58
Poissons Ratio	0.280 - 0.360	0.280 - 0.360	Average value: 0.332 Grade Count:5
Shear Modulus	0.900 - 0.980 GPa	131 - 142 ksi	Average value: 0.940 GPa Grade Count:5
Izod Impact, Notched	0.0300 - 14.1 J/cm	0.0562 - 26.5 ft-lb/in	Average value: 4.68 J/cm Grade Count:54
	0.500 - 7.20 J/cm	0.937 - 13.5 ft-lb/in	Average value: 2.37 J/cm Grade Count:26
	@Temperature -30.0 - 0.000 °C	@Temperature -22.0 - 32.0 °F	
	0.374 - 0.374 J/cm	0.701 - 0.701 ft-lb/in	Average value: 2.37 J/cm Grade Count:1
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	
	0.374 - 0.374 J/cm	0.701 - 0.701 ft-lb/in	Average value: 2.37 J/cm Grade Count:1
	@Thickness 3.17 - 3.17 mm	@Thickness 0.125 - 0.125 in	
Izod Impact, Notched (ISO)	7.00 - 125 kJ/m²	3.33 - 59.5 ft-lb/in²	Average value: 35.4 kJ/m² Grade Count:27
	3.00 - 47.0 kJ/m²	1.43 - 22.4 ft-lb/in²	Average value: 15.1 kJ/m² Grade Count:26
	@Temperature -30.0 - 0.000 °C	@Temperature -22.0 - 32.0 °F	
Charpy Impact Unnotched	1000 J/cm²	4760 ft-lb/in²	Grade Count:7
	999.9 - 999.9 J/cm²	4759 - 4759 ft-lb/in²	Grade Count:7
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	
Charpy Impact, Notched	0.900 - 12.8 J/cm²	4.28 - 60.9 ft-lb/in²	Average value: 4.09 J/cm² Grade Count:36

Mechanical Properties	Metric	English	Comments
	0.800 - 3.50 J/cm²	3.81 - 16.7 ft-lb/in²	Average value: 1.75 J/cm² Grade Count:13
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Dart Drop, Total Energy	7.00 - 50.0 J	5.16 - 36.9 ft-lb	Average value: 37.2 J Grade Count:14
	10.0 - 33.0 J	7.38 - 24.3 ft-lb	
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	Average value: 21.0 J Grade Count:9
Puncture Energy	45.0 - 45.0 J	33.2 - 33.2 ft-lb	Average value: 45.0 J Grade Count:1
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	62.0 - 100 µm/m-°C	34.4 - 55.6 µin/in-°F	Average value: 74.0 µm/m-°C Grade Count:33
CTE, linear, Transverse to Flow	62.0 - 95.0 µm/m-°C	34.4 - 52.8 µin/in-°F	Average value: 74.6 µm/m-°C Grade Count:25
Thermal Conductivity	0.170 - 0.250 W/m-K	1.18 - 1.74 BTU-in/hr-ft²-°F	Average value: 0.201 W/m-K Grade Count:11
Maximum Service Temperature, Air	90.0 - 115 °C	194 - 239 °F	Average value: 107 °C Grade Count:6
Hot Ball Pressure Test	85.0 - 130 °C	185 - 266 °F	Average value: 105 °C Grade Count:9
Deflection Temperature at 0.46 MPa (66 psi)	90.0 - 132 °C	194 - 270 °F	Average value: 113 °C Grade Count:44
Deflection Temperature at 1.8 MPa (264 psi)	80.0 - 122 °C	176 - 252 °F	Average value: 97.2 °C Grade Count:54
Vicat Softening Point	96.0 - 146 °C	205 - 295 °F	Average value: 119 °C Grade Count:60
UL RTI, Electrical	50.0 - 90.0 °C	122 - 194 °F	Average value: 70.0 °C Grade Count:4
UL RTI, Mechanical with Impact	50.0 - 90.0 °C	122 - 194 °F	Average value: 70.0 °C Grade Count:4
UL RTI, Mechanical without Impact	50.0 - 90.0 °C	122 - 194 °F	Average value: 70.0 °C Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 6.20e+15 ohm-cm	1.00e+12 - 6.20e+15 ohm-cm	Average value: 1.58e+15 ohm-cm Grade Count:11
Surface Resistance	1.00e+10 - 2.40e+16 ohm	1.00e+10 - 2.40e+16 ohm	Average value: 5.49e+15 ohm Grade Count:13
Dielectric Constant	3.00 - 3.40	3.00 - 3.40	Average value: 3.09 Grade Count:6
Dielectric Strength	27.1 - 38.0 kV/mm	688 - 965 kV/in	Average value: 33.3 kV/mm Grade Count:9

Electrical Properties	Metric	English	Comments
Dielectric Factor	0.0000 - 0.0175	0.0000 - 0.0175	Value: 0.0102 Grade Count:18
Comparative Tracking Index	225 - 600 V	225 - 600 V	Average value: 378 V Grade Count:8

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