

Covestro Makrolon® 1143 Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Molded

Material Notes:

Pseudoplastic behavior and high viscosity extrusion grade with UV stabilizer and easy mold release, special grade for twin-wall sheet. Information provided by Bayer. As of 1 September 2015, Bayer Material Science was separated from Bayer AG and officially adopted its new name – Covestro.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Covestro-Makrolon-1143-Polycarbonate.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	
Water Absorption	0.35 %	0.35 %	Saturation in water
Moisture Absorption at Equilibrium	0.15 %	0.15 %	Equilibrium at 50% RH
Water Absorption at Saturation	0.35 %	0.35 %	
Melt Flow	3.0 g/10 min @Load 1.20 kg, Temperature 300 °C	3.0 g/10 min @Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	63.0 MPa	9140 psi	
Elongation at Break	>= 50 %	>= 50 %	Nominal
Elongation at Yield	6.0 %	6.0 %	
Tensile Modulus	2.40 GPa	348 ksi	
Charpy Impact Unnotched	NB	NB	
Tensile Creep Modulus, 1 hour	2200 MPa	319000 psi	
Tensile Creep Modulus, 1000 hours	1900 MPa	276000 psi	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 µm/m-°C	38.9 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	70.0 µm/m-°C	38.9 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Deflection Temperature at 0.46 MPa			

(56 psi) Thermal Properties	138 °C Metric	280 °F English	Comments
Deflection Temperature at 1.8 MPa (264 psi)	130 °C	266 °F	
Vicat Softening Point	145 °C	293 °F	
Glass Transition Temp, Tg	148 °C	298 °F	
UL RTI, Electrical	75.0 °C @Thickness 1.50 mm	167 °F @Thickness 0.0591 in	
UL RTI, Mechanical with Impact	75.0 °C @Thickness 1.50 mm	167 °F @Thickness 0.0591 in	
UL RTI, Mechanical without Impact	75.0 °C @Thickness 1.50 mm	167 °F @Thickness 0.0591 in	
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	
Oxygen Index	26 %	26 %	

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	DIN 5026-1
Transmission, Visible	87 % @Thickness 1.00 mm	87 % @Thickness 0.0394 in	ISO 489-A

Electrical Properties	Metric	English	Comments
Electrical Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	
Surface Resistance	1.00e+15 ohm	1.00e+15 ohm	
Dielectric Constant	2.9 @Frequency 1e+6 Hz	2.9 @Frequency 1e+6 Hz	
	3.0 @Frequency 100 Hz	3.0 @Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	
Dissipation Factor	0.0010 @Frequency 100 Hz	0.0010 @Frequency 100 Hz	
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	

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