

Covestro Makrolon® 3105 Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Unreinforced, Flame Retardant

Material Notes:

Injection molding and extrusion grade with high viscosity, with easy mold release. Information provided by Bayer. As of 1 September 2015, Bayer MaterialScience 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-3105-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	6.0 g/10 min @Load 1.20 kg, Temperature 300 °C	6.0 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 @Temperature 20.0 °C	38.9 µin/in-°F @Temperature 68.0 °F	
CTE, linear, Transverse to Flow	70.0 µm/m-°C @Temperature 20.0 °C	38.9 µin/in-°F @Temperature 68.0 °F	
Deflection Temperature at 0.46 MPa (66 psi)	140 °C	284 °F	

Thermal Properties	Metric	English	Comments
Vicat Softening Point	146 °C	295 °F	
Glass Transition Temp, Tg	148 °C	298 °F	
UL RTI, Electrical	125 °C @Thickness 1.50 mm	257 °F @Thickness 0.0591 in	
UL RTI, Mechanical with Impact	115 °C @Thickness 1.50 mm	239 °F @Thickness 0.0591 in	
UL RTI, Mechanical without Impact	125 °C @Thickness 1.50 mm	257 °F @Thickness 0.0591 in	
Flammability, UL94	V-2 @Thickness 1.60 mm	V-2 @Thickness 0.0630 in	
Oxygen Index	26 %	26 %	

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	DIN 5026-1
Transmission, Visible	88 % @Thickness 1.02 mm	88 % @Thickness 0.0400 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	
Dielectric Strength	3.0 @Frequency 100 Hz	3.0 @Frequency 100 Hz	
Dissipation Factor	0.0010 @Frequency 100 Hz	0.0010 @Frequency 100 Hz	
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	
	<= 60 sec	<= 60 sec	

Arc Resistance Electrical Properties	Metric @ Thickness 3.00 mm	English @ Thickness 0.118 in	UL Rating PLC 7 (-60 sec) Comments
Comparative Tracking Index	275 V	275 V	
Hot Wire Ignition, HWI	30 - 60 sec @Thickness 3.00 mm	30 - 60 sec @Thickness 0.118 in	UL Rating PLC 2 (30-60 sec)
High Amp Arc Ignition, HAI	>= 120 arcs @Thickness 1.50 mm	>= 120 arcs @Thickness 0.0591 in	UL Rating PLC 0 (>120 arcs)
High Voltage Arc-Tracking Rate, HVTR	10.0 - 25.4 mm/min @Thickness 1.50 mm	0.394 - 1.00 in/min @Thickness 0.0591 in	UL Rating PLC 1 (10-25.4 mm/min.)

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