

Covestro Makrolon® 9415(Z) Polycarbonate

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

Material Notes:

Medium viscosity, flame retardant extrusion and injection molding grade with 10% standard glass fibers and easy mold release agent. 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-9415Z-Polycarbonate.php

Physical Properties	Metric	English	Comments
Density	1.27 g/cc	0.0459 lb/in ³	
Water Absorption	0.29 %	0.29 %	Saturation in water
Moisture Absorption at Equilibrium	0.12 %	0.12 %	Equilibrium at 50% RH
Water Absorption at Saturation	0.29 %	0.29 %	
Linear Mold Shrinkage	0.0030 - 0.0050 cm/cm	0.0030 - 0.0050 in/in	ASTM D955
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
Hardness, Rockwell M	75	75	ASTM D785
Tensile Strength, Ultimate	69.0 MPa	10000 psi	ASTM D638
Tensile Strength, Yield	80.0 MPa	11600 psi	ASTM D638
Elongation at Break	10 %	10 %	ASTM D638
Elongation at Yield	5.0 %	5.0 %	ASTM D638
Tensile Modulus	4.00 GPa	580 ksi	
Flexural Yield Strength	103 MPa	14900 psi	at 5% strain; ASTM D790
Flexural Modulus	3.40 GPa	493 ksi	ASTM D790
Izod Impact, Notched	1.10 J/cm @Thickness 3.20 mm	2.06 ft-lb/in @Thickness 0.126 in	ASTM D256
Charpy Impact Unnotched	10.0 J/cm ²	47.6 ft-lb/in ²	
Tensile Creep Modulus, 1 hour	5900 MPa	856000 psi	

Mechanical Properties, 1000 hours	Metric MPa	English psi	Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	38.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 20.0 $^\circ\text{C}$	21.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 68.0 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	65.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 20.0 $^\circ\text{C}$	36.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 68.0 $^\circ\text{F}$	
Specific Heat Capacity	1.13 J/g- $^\circ\text{C}$	0.270 BTU/lb- $^\circ\text{F}$	ASTM D2766
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft 2 - $^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	143 $^\circ\text{C}$	289 $^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	138 $^\circ\text{C}$	280 $^\circ\text{F}$	
Vicat Softening Point	144 $^\circ\text{C}$	291 $^\circ\text{F}$	
Glass Transition Temp, Tg	148 $^\circ\text{C}$	298 $^\circ\text{F}$	
UL RTI, Electrical	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
UL RTI, Mechanical with Impact	115 $^\circ\text{C}$	239 $^\circ\text{F}$	
UL RTI, Mechanical without Impact	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
Flammability, UL94	V-0 @Thickness 1.60 mm	V-0 @Thickness 0.0630 in	
Oxygen Index	35 %	35 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+15$ ohm-cm	$\geq 1.00\text{e}+15$ ohm-cm	
Surface Resistance	$1.00\text{e}+14$ ohm	$1.00\text{e}+14$ ohm	
Dielectric Constant	3.0 @Frequency 1e+6 Hz	3.0 @Frequency 1e+6 Hz	
	3.2 @Frequency 100 Hz	3.2 @Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	
Dissipation Factor	0.00090	0.00090	

Electrical Properties	@Frequency 100 Hz Metric	@Frequency 100 Hz English	Comments
	0.0080	0.0080	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Arc Resistance	115 sec	115 sec	Tungsten Electrodes; ASTM D495
Comparative Tracking Index	175 V	175 V	

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