

Covestro Makrolon® 3103 Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, UV Stabilized

Material Notes:

Injection molding and extrusion grade with high viscosity, UV stabilized, special grade for sheets. 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-3103-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 %	
Linear Mold Shrinkage	0.0060 - 0.0080 cm/cm	0.0060 - 0.0080 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
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength, Ultimate	72.0 MPa	10400 psi	ASTM D638
Tensile Strength, Yield	63.0 MPa	9140 psi	
Elongation at Break	125 %	125 %	ASTM D638
Elongation at Yield	6.0 %	6.0 %	
Tensile Modulus	2.40 GPa	348 ksi	
Flexural Yield Strength	86.0 MPa	12500 psi	at 5% strain; ASTM D790
Flexural Modulus	2.30 GPa	334 ksi	ASTM D790
Izod Impact, Notched	9.60 J/cm @Thickness 3.20 mm	18.0 ft-lb/in @Thickness 0.126 in	ASTM D256
Charpy Impact Unnotched	NB	NB	
Tensile Creep Modulus, 1 hour			

Mechanical Properties	2200 MPa Metric	319000 psi English	Comments
Tensile Creep Modulus, 1000 hours	1900 MPa	276000 psi	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	
Specific Heat Capacity	1.17 J/g- $^{\circ}\text{C}$	0.280 BTU/lb- $^{\circ}\text{F}$	ASTM D2766
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft 2 - $^{\circ}\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	142 $^{\circ}\text{C}$	288 $^{\circ}\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	132 $^{\circ}\text{C}$	270 $^{\circ}\text{F}$	
Vicat Softening Point	148 $^{\circ}\text{C}$	298 $^{\circ}\text{F}$	
Glass Transition Temp, Tg	148 $^{\circ}\text{C}$	298 $^{\circ}\text{F}$	
UL RTI, Electrical	125 $^{\circ}\text{C}$ @Thickness 1.50 mm	257 $^{\circ}\text{F}$ @Thickness 0.0591 in	
UL RTI, Mechanical with Impact	115 $^{\circ}\text{C}$ @Thickness 1.50 mm	239 $^{\circ}\text{F}$ @Thickness 0.0591 in	
UL RTI, Mechanical without Impact	125 $^{\circ}\text{C}$ @Thickness 1.50 mm	257 $^{\circ}\text{F}$ @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	ASTM D542
Haze	1.0 % @Thickness 3.20 mm	1.0 % @Thickness 0.126 in	ASTM D1003
Transmission, Visible	88 % @Thickness 3.20 mm	88 % @Thickness 0.126 in	ASTM D1003

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00 \times 10^{15}$ ohm-cm	$\geq 1.00 \times 10^{15}$ ohm-cm	
Surface Resistance	1.00×10^{15} ohm	1.00×10^{15} ohm	
Dielectric Constant	2.9	2.9	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	3.0	3.0	
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	
Dissipation Factor	0.0010	0.0010	
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.010	0.010	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Arc Resistance	120 sec	120 sec	Tungsten Electrodes; ASTM D495
Comparative Tracking Index	275 V	275 V	
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL Rating PLC 2 (30-60 sec)
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Amp Arc Ignition, HAI	≥ 120 arcs	≥ 120 arcs	UL Rating PLC 0 (>120 arcs)
	@Thickness 1.50 mm	@Thickness 0.0591 in	
High Voltage Arc-Tracking Rate, HVTR	10.0 - 25.4 mm/min	0.394 - 1.00 in/min	UL Rating PLC 1 (10-25.4 mm/min.)
	@Thickness 1.50 mm	@Thickness 0.0591 in	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China