

Covestro Makrolon® SF-800 Polycarbonate, Structural Foam (discontinued **)

Category : Other Engineering Material , Composite Core Material , Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Foam

Material Notes:

Properties based on foam density of 0.90 g/cc. Information provided by Bayer Corporation, Plastics Division As of 1 September 2015, Bayer MaterialScience was separated from Bayer AG and has officially adopted its new name – Covestro. This product was discontinued prior to the separation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Covestro-Makrolon-SF-800-Polycarbonate-Structural-Foam-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.23 g/cc	0.0444 lb/in ³	ASTM D792
Apparent Bulk Density	0.900 g/cc	0.0325 lb/in ³	Foam Density
Water Absorption	0.15 %	0.15 %	24 hr immersion; ASTM D570
Water Absorption at Saturation	0.30 %	0.30 %	Equilibrium Immersion; ASTM D570
Linear Mold Shrinkage	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	ASTM D955
Melt Flow	5.5 g/10 min @Load 1.20 kg, Temperature 300 °C	5.5 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	42.0 MPa	6090 psi	ASTM D638
Elongation at Break	5.0 %	5.0 %	ASTM D638
Tensile Modulus	2.10 GPa	305 ksi	ASTM D638
Flexural Yield Strength	76.0 MPa	11000 psi	at 5% strain; ASTM D790
Flexural Modulus	2.34 GPa	339 ksi	ASTM D790

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 µm/m-°C @Temperature 20.0 °C	27.8 µin/in-°F @Temperature 68.0 °F	ASTM D696
Specific Heat Capacity	1.20 J/g-°C	0.287 BTU/lb-°F	ASTM D2766
Thermal Conductivity	0.150 W/m-K	1.04 BTU-in/hr-ft ² -°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	138 °C	280 °F	Unannealed; ASTM D648

Thermal Properties	Metric	English	Comments
Deflection Temperature at 1.8 MPa (150 psi)	127 °C	261 °F	Unannealed; ASTM D648
UL RTI, Electrical	110 °C	230 °F	
	@Thickness 6.00 mm	@Thickness 0.236 in	
UL RTI, Mechanical with Impact	100 °C	212 °F	
	@Thickness 6.00 mm	@Thickness 0.236 in	
UL RTI, Mechanical without Impact	110 °C	230 °F	
	@Thickness 6.00 mm	@Thickness 0.236 in	
Flammability, UL94	V-0	V-0	
	@Thickness 3.00 mm	@Thickness 0.118 in	
	V-0	V-0	
	@Thickness 3.00 mm	@Thickness 0.118 in	

Optical Properties	Metric	English	Comments
Transmission, Visible	0.00 %	0.00 %	Opaque only

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257
Surface Resistance	1.00e+15 ohm	1.00e+15 ohm	ASTM D257
Dielectric Constant	2.9	2.9	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	3.0	3.0	ASTM D150
	@Frequency 60 Hz	@Frequency 60 Hz	
Dielectric Strength	>= 16.0 kV/mm	>= 406 kV/in	ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0022	0.0022	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.0031	0.0031	ASTM D150
	@Frequency 60 Hz	@Frequency 60 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	UL Rating PLC 6 (60-120 sec)
	@Thickness 6.00 mm	@Thickness 0.236 in	
Comparative Tracking Index	100 - 175 V	100 - 175 V	UL Rating PLC 4 (100-175 V)

Electrical Properties	@Thickness 6.00 mm Metric	@Thickness 0.236 in English	Comments
Hot Wire Ignition, HWI	60 - 120 sec @Thickness 6.00 mm	60 - 120 sec @Thickness 0.236 in	UL Rating PLC 1 (60-120 sec)
High Amp Arc Ignition, HAI	15 - 30 arcs @Thickness 6.00 mm	15 - 30 arcs @Thickness 0.236 in	UL Rating PLC 3 (15-30 arcs)
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min @Thickness 66.0 mm	3.15 - 5.91 in/min @Thickness 2.60 in	UL Rating PLC 3 (80-150 mm/min.)

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