

Covestro Makrolon® FU1007 Polycarbonate

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

Material Notes:

Main characteristics:• High toughness• Good heat resistance• Glass-like transparency, optical quality• High dimensional accuracy and stability
Grade characteristics:• Furniture applications• Medium viscosity, easy release• UV stabilized• Fire standards UNI 8456, 8457, 9174, 9175As 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-FU1007-Polycarbonate.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.12 %	0.12 %	ISO 62, 50% RH
Water Absorption at Saturation	0.30 %	0.30 %	ISO 62
Linear Mold Shrinkage, Flow	0.0065 cm/cm	0.0065 in/in	60x60x2 mm; 500 bar; ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Linear Mold Shrinkage, Transverse	0.0070 cm/cm	0.0070 in/in	60x60x2 mm; 500 bar; ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Melt Flow	10 g/10 min	10 g/10 min	ISO 1133
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Puncture Resistance	5400 N	1210 lb (f)	ISO 6603-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	6300 N	1420 lb (f)	ISO 6603-2
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Ball Indentation Hardness	116 MPa	16800 psi	ISO 2039-1
Tensile Strength at Break	70.0 MPa	10200 psi	50 mm/min; ISO 527-1,-2
Tensile Strength, Yield	67.0 MPa	9720 psi	50 mm/min; ISO 527-1,-2
Elongation at Break	>= 50 %	>= 50 %	Nominal, 50 mm/min; ISO 527-1,-2
	120 %	120 %	
Elongation at Yield	6.1 %	6.1 %	50 mm/min; ISO 527-1,-2

Tensile Modulus Mechanical Properties	2.40 GPa Metric	348 ksi English	1 mm/min; ISO 527-1,-2 Comments
Flexural Strength	98.0 MPa	14200 psi	2 mm/min; ISO 178
Flexural Yield Strength	74.0 MPa @Strain 3.50 %	10700 psi @Strain 3.50 %	2 mm/min; ISO 178
Flexural Modulus	2.40 GPa	348 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	12.0 kJ/m ² @Thickness 3.20 mm, Temperature -30.0 °C	5.71 ft-lb/in ² @Thickness 0.126 in, Temperature -22.0 °F	complete break; b.o. ISO 180-A
	85.0 kJ/m ² @Thickness 3.20 mm, Temperature 23.0 °C	40.4 ft-lb/in ² @Thickness 0.126 in, Temperature 73.4 °F	partial break; b.o. ISO 180-A
Charpy Impact Unnotched	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 179-1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	ISO 179-1eU
Charpy Impact, Notched	1.40 J/cm ² @Thickness 3.00 mm, Temperature -30.0 °C	6.66 ft-lb/in ² @Thickness 0.118 in, Temperature -22.0 °F	complete break; ISO 7391/b.o. ISO 179-1eA
	7.50 J/cm ² @Thickness 3.00 mm, Temperature 23.0 °C	35.7 ft-lb/in ² @Thickness 0.118 in, Temperature 73.4 °F	partial break; ISO 7391/b.o. ISO 179-1eA
Puncture Energy	60.0 J @Temperature 23.0 °C	44.3 ft-lb @Temperature 73.4 °F	ISO 6603-2
	65.0 J @Temperature -30.0 °C	47.9 ft-lb @Temperature -22.0 °F	ISO 6603-2
Tensile Creep Modulus, 1 hour	2200 MPa	319000 psi	ISO 899-1
Tensile Creep Modulus, 1000 hours	1900 MPa	276000 psi	ISO 899-1

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	65.0 µm/m-°C @Temperature 23.0 - 55.0 °C	36.1 µin/in-°F @Temperature 73.4 - 131 °F	ISO 11359-1,-2
CTE, linear, Transverse to Flow	65.0 µm/m-°C @Temperature 23.0 -	36.1 µin/in-°F @Temperature 73.4 -	ISO 11359-1,-2

Thermal Properties	55.0 °C Metric	131 °F English	Comments
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft²-°F	cross-flow; ISO 8302
Hot Ball Pressure Test	135 °C	275 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	136 °C	277 °F	ISO 75-1,-2
Deflection Temperature at 1.8 MPa (264 psi)	124 °C	255 °F	ISO 75-1,-2
Vicat Softening Point	144 °C	291 °F	50°C/h; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
	145 °C	293 °F	120°C/h; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
Glass Transition Temp, Tg	143 °C	289 °F	10°C/min; ISO 11357-1,-2
UL RTI, Electrical	125 °C	257 °F	UL 746B
UL RTI, Mechanical with Impact	115 °C	239 °F	UL 746B
UL RTI, Mechanical without Impact	125 °C	257 °F	UL 746B
Flash Point	480 °C	896 °F	ASTM D 1929
	550 °C	1020 °F	self ignition; ASTM D 1929
Oxygen Index	28 %	28 %	Method A; ISO 4589-2

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	Procedure A; ISO 489
Haze	<= 0.80 %	<= 0.80 %	ISO 14782
	@Thickness 3.00 mm	@Thickness 0.118 in	
Transmission, Visible	87 %	87 %	ISO 13468-2
	@Thickness 4.00 mm	@Thickness 0.157 in	
	88 %	88 %	ISO 13468-2
	@Thickness 3.00 mm	@Thickness 0.118 in	
	89 %	89 %	ISO 13468-2
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	89 %	89 %	ISO 13468-2
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Processing Properties	Metric	English	Comments
Melt Temperature	300 °C	572 °F	Injection molding; ISO 294
Mold Temperature	80.0 °C	176 °F	Injection molding; ISO 294
Injection Velocity	200 mm/sec	7.87 in/sec	ISO 294

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