

Covestro Makrolon® 1881 Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Impact Modified , 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: • Impact modified • Improved ultrasonic weldability • UV stabilized • Low viscosity, easy release • Injection molding
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-1881-Polycarbonate.php

Physical Properties	Metric	English	Comments
Bulk Density	0.640 g/cc	0.0231 lb/in ³	pellets; ISO 60
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	20 g/10 min	20 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	4900 N	1100 lb (f)	ISO 6603-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	5800 N	1300 lb (f)	ISO 6603-2
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Ball Indentation Hardness	113 MPa	16400 psi	ISO 2039-1
Tensile Strength at Break	60.0 MPa	8700 psi	50 mm/min; ISO 527-1,-2
Tensile Strength, Yield	60.0 MPa	8700 psi	50 mm/min; ISO 527-1,-2
Elongation at Break	>= 50 %	>= 50 %	Nominal, 50 mm/min; ISO 527-1,-2
	110 %	110 %	

Mechanical Properties	Metric	English	Comments
Tensile Modulus	2.30 GPa	334 ksi	1 mm/min; ISO 527-1,-2
Flexural Strength	93.0 MPa	13500 psi	2 mm/min; ISO 178
Flexural Yield Strength	70.0 MPa @Strain 3.50 %	10200 psi @Strain 3.50 %	2 mm/min; ISO 178
Flexural Modulus	2.30 GPa	334 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	14.0 kJ/m ² @Thickness 3.20 mm, Temperature -30.0 °C	6.66 ft-lb/in ² @Thickness 0.126 in, Temperature -22.0 °F	complete break; b.o. ISO 180-A
	70.0 kJ/m ² @Thickness 3.20 mm, Temperature 23.0 °C	33.3 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
	NB @Temperature -60.0 °C	NB @Temperature -76.0 °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
	6.00 J/cm ² @Thickness 3.00 mm, Temperature 23.0 °C	28.6 ft-lb/in ² @Thickness 0.118 in, Temperature 73.4 °F	partial break; ISO 7391/b.o. ISO 179-1eA
Puncture Energy	50.0 J @Temperature 23.0 °C	36.9 ft-lb @Temperature 73.4 °F	ISO 6603-2
	55.0 J @Temperature -30.0 °C	40.6 ft-lb @Temperature -22.0 °F	ISO 6603-2

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
	65.0 µm/m-°C	36.1 µin/in-°F	

Thermal Properties	Metric	English	Comments
CTE, linear Transverse to Flow	@ Temperature 23.0 - 55.0 °C	@ Temperature 73.4 - 131 °F	ISO 11358-1,-2
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	cross-flow; ISO 8302
Hot Ball Pressure Test	134 °C	273 °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)	123 °C	253 °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	
Flash Point	460 °C	860 °F	ASTM D 1929
	540 °C	1000 °F	self ignition; ASTM D 1929
Oxygen Index	30 %	30 %	Method A; IEC 4589-2
Glow Wire Test	825 °C	1520 °F	GWIT; IEC 60695-2-13
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	825 °C	1520 °F	GWIT; IEC 60695-2-13
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	850 °C	1560 °F	GWIT; IEC 60695-2-13
	@Thickness 3.00 mm	@Thickness 0.118 in	
	850 °C	1560 °F	GWFI; IEC 60695-2-12
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	850 °C	1560 °F	GWFI; IEC 60695-2-12
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	960 °C	1760 °F	GWFI; IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 60093
Surface Resistance	1.00e+16 ohm	1.00e+16 ohm	IEC 60093
	3.0	3.0	

Dielectric Constant Electrical Properties	Metric @Frequency 1.00e+6 Hz	English @Frequency 1.00e+6 Hz	IEC 60250 Comments
	3.1	3.1	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	34.0 kV/mm	864 kV/in	IEC 60243-1
	@Thickness 1.00 mm	@Thickness 0.0394 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.0105	0.0105	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	125 V	125 V	CTI M; Solution B; IEC 60112
	250 V	250 V	Solution A; IEC 60112

Processing Properties	Metric	English	Comments
Melt Temperature	280 °C	536 °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

Descriptive Properties	Value	Comments
Electrolytic Corrosion	A1	IEC 60426

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