

Covestro Makrolon® 2856 Polycarbonate






Categories: [Polymer](#); [Thermoplastic](#); [Polycarbonate \(PC\)](#); [Polycarbonate, Molded](#)



Material Notes: MVR (300 °C/1.2 kg) 9.0 cm³/10 min; food contact quality; medium viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent, translucent and opaque colors

As of 1 September 2015, Bayer MaterialScience was separated from Bayer AG and officially adopted its new name – Covestro.




Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Bulk Density	0.660 g/cc	0.0238 lb/in ³	Pellets; ISO 60
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.12 %	0.12 %	ISO 62
Water Absorption at Saturation	0.30 %	0.30 %	ISO 62
Water Vapor Transmission	15.0 g/m ² /day @Thickness 0.100 mm, Temperature 23.0 °C	0.966 g/100 in ² /day @Thickness 0.00394 in, Temperature 73.4 °F	85% RH; ISO 15106-1
Oxygen Transmission	650 cc-mm/m ² -24hr-atm	1650 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 100 µm film; b.o. ISO 2556
	2760 cc-mm/m ² -24hr-atm	7010 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 25.4 µm (1 mil) film; b.o. ISO 2556
Nitrogen Transmission	120 cc-mm/m ² -24hr-atm	305 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 100 µm film; b.o. ISO 2556
	510 cc-mm/m ² -24hr-atm	1300 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 25.4 µm (1 mil) film; b.o. ISO 2556
Carbon Dioxide Transmission	3800 cc-mm/m ² -24hr-atm	9650 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 100 µm film; b.o. ISO 2556
	16900 cc-mm/m ² -24hr-atm	42900 cc-mil/100 in ² -24hr-atm	cm ³ /(m ² ·24 h·bar), 25.4 µm (1 mil) film; b.o. ISO 2556
Linear Mold Shrinkage	0.0060 - 0.0080 cm/cm	0.0060 - 0.0080 in/in	parallel/normal; b.o. ISO 2577
Linear Mold Shrinkage, Flow	0.0070 cm/cm	0.0070 in/in	60x60x2 mm; 500 bar; ISO 294-4,2577
Linear Mold Shrinkage, Transverse	0.0050 cm/cm	0.0050 in/in	60x60x2 mm; 500 bar; ISO 294-4,2577
Melt Flow	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	ISO 1133
Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	115 MPa	16700 psi	ISO 2039-1
Tensile Strength at Break	70.0 MPa	10200 psi	50 mm/min; ISO 527-1/-2
Tensile Strength, Yield	65.0 MPa	9430 psi	50 mm/min; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	Nominal, 50 mm/min; ISO 527-1/-2

	130 %	130 %	50 mm/min; ISO 527-1/-2
Elongation at Yield	6.2 %	6.2 %	50 mm/min; ISO 527-1/-2
Tensile Modulus	2.40 GPa	348 ksi	1 mm/min; ISO 527-1/-2
Flexural Strength	97.0 MPa	14100 psi	2 mm/min; ISO 178
	73.0 MPa @Strain 3.50 %	10600 psi @Strain 3.50 %	2 mm/min; ISO 178
Flexural Modulus	2.40 GPa	348 ksi	2 mm/min; ISO 178
Flexural Strain at Yield	7.1 %	7.1 %	2 mm/min; ISO 178
Izod Impact, Notched (ISO) 	15.0 kJ/m ² @Thickness 3.00 mm, Temperature -30.0 °C	7.14 ft-lb/in ² @Thickness 0.118 in, Temperature -22.0 °F	complete break; ISO 7391/b.o. ISO 180-A
	70.0 kJ/m ² @Thickness 3.00 mm, Temperature 23.0 °C	33.3 ft-lb/in ² @Thickness 0.118 in, Temperature 73.4 °F	partial break; ISO 7391/b.o. ISO 180-A
Charpy Impact Unnotched 	NB	NB	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 	1.60 J/cm ² @Thickness 3.00 mm, Temperature -30.0 °C	7.61 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
Impact 	5400	5400	Puncture - maximum force (N); ISO 6603-2
	6300 @Temperature -30.0 °C	6300 @Temperature -22.0 °F	Puncture - maximum force (N); ISO 6603-2
Puncture Energy 	60.0 J	44.3 ft-lb	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


Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 60093
Surface Resistance	1.00e+16 ohm	1.00e+16 ohm	IEC 60093
Dielectric Constant 	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	IEC 60250
	3.1 @Frequency 100 Hz	3.1 @Frequency 100 Hz	IEC 60250
Dielectric Strength	34.0 kV/mm	864 kV/in	1 mm; IEC 60243-1
Dissipation Factor 	0.00050 @Frequency 100 Hz	0.00050 @Frequency 100 Hz	IEC 60250
	0.0090 @Frequency 1.00e+6 Hz	0.0090 @Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking	125 V	125 V	CTI M; Solution B; IEC 60112

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	250 V	250 V	Solution A; IEC 60112
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	65.0 µm/m-°C	36.1 µin/in-°F	23-55°C; ISO 11359-1/-2
CTE, linear, Transverse to Flow	65.0 µm/m-°C	36.1 µin/in-°F	23-55°C; ISO 11359-1/-2
Specific Heat Capacity	1.70 J/g-°C	0.406 BTU/lb-°F	
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	cross-flow; ISO 8302
Hot Ball Pressure Test	136 °C	277 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	137 °C	279 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	125 °C	257 °F	ISO 75-1/-2
Vicat Softening Point	145 °C	293 °F	50°C/h 50N; ISO 306
	146 °C	295 °F	50N, 120°C/h; ISO 306
Glass Transition Temp, T _g	145 °C	293 °F	ISO 11357-1/-2
UL RTI, Electrical	125 °C @Thickness 1.50 mm	257 °F @Thickness 0.0591 in	UL 746B
UL RTI, Mechanical with Impact	115 °C @Thickness 1.50 mm	239 °F @Thickness 0.0591 in	UL 746B
UL RTI, Mechanical without Impact	125 °C @Thickness 1.50 mm	257 °F @Thickness 0.0591 in	UL 746B
Flammability, UL94 	HB @Thickness 2.50 mm	HB @Thickness 0.0984 in	
	V-2 @Thickness 0.750 mm	V-2 @Thickness 0.0295 in	
Flash Point	480 °C	896 °F	ignition; ASTM D1929
	550 °C	1020 °F	self ignition; ASTM D1929
Oxygen Index	28 %	28 %	Method A; ISO 4589-1/-2
Glow Wire Test 	750 °C @Thickness 1.50 mm	1380 °F @Thickness 0.0591 in	b.o. EDF HN60 E.02
	750 °C @Thickness 3.00 mm	1380 °F @Thickness 0.118 in	b.o. EDF HN60 E.02
Glow Wire Ignition Temperature 	875 °C @Thickness 0.750 mm	1610 °F @Thickness 0.0295 in	IEC 60695-2-13
	875 °C @Thickness 1.50 mm	1610 °F @Thickness 0.0591 in	IEC 60695-2-13
	875 °C @Thickness 3.00 mm	1610 °F @Thickness 0.118 in	IEC 60695-2-13
Glow Wire Flammability	850 °C @Thickness 1.00 mm	1560 °F @Thickness 0.0394 in	IEC 60695-2-12

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	875 °C @Thickness 1.50 mm	1610 °F @Thickness 0.0591 in	IEC 60695-2-12
	930 °C @Thickness 3.00 mm	1710 °F @Thickness 0.118 in	IEC 60695-2-12

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	Procedure A; ISO 489
Haze	<= 0.80 % @Thickness 76.2 mm	<= 0.80 % @Thickness 3.00 in	ISO 14782
Transmission, Visible 	87 % @Thickness 102 mm	87 % @Thickness 4.00 in	ISO 13468-2
	88 % @Thickness 76.2 mm	88 % @Thickness 3.00 in	ISO 13468-2
	89 % @Thickness 25.4 mm	89 % @Thickness 1.00 in	ISO 13468-2
	89 % @Thickness 50.8 mm	89 % @Thickness 2.00 in	ISO 13468-2

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

Descriptive Properties

Electrolytic corrosion		A1	IEC 60426
Needle flame test		10 s	Method K, 3 mm; IEC 60695-11-5
		120 s	Method F, 3 mm; IEC 60695-11-5
		5 s	Method K, 1.5 mm; IEC 60695-11-5
		5 s	Method K, 2 mm; IEC 60695-11-5
		60 s	Method F, 1.5 mm; IEC 60695-11-5
		60 s	Method F, 2 mm; IEC 60695-11-5

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