Covestro Makrolon® 2258 Polycarbonate

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

Material Notes:

Main characteristics:• High toughness• Good heat resistance• Glass-like transparency, optical quality• High dimensional accuracy and stabilityGrade characteristics:• Medical devices - biocompatible ISO 10993-1• Low viscosity; easy releaseAs 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-2258-Polycarbonate.php

Physical Properties	Metric	English	Comments
Bulk Density	0.660 g/cc	0.0238 lb/in³	pellets; ISO 60
Density	1.20 g/cc	0.0434 lb/in³	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 @Thickness 2.00 mm	0.0065 in/in @Thickness 0.0787 in	60x60x2 mm; 500 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0065 cm/cm @Thickness 2.00 mm	0.0065 in/in @Thickness 0.0787 in	60x60x2 mm; 500 bar; ISO 294-4
Melt Flow	37 g/10 min @Load 1.20 kg, Temperature 300 °C	37 g/10 min @Load 2.65 lb, Temperature 572 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Puncture Resistance	4900 N @Temperature 23.0 °C	1100 lb (f) @Temperature 73.4 °F	ISO 6603-2
	5900 N @Temperature -30.0 °C	1330 lb (f) @Temperature -22.0 °F	ISO 6603-2
Ball Indentation Hardness	115 MPa	16700 psi	ISO 2039-1
Tensile Strength at Break	60.0 MPa	8700 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
	125 %	125 %	50 mm/min; b.o. ISO 527-1,-2

Mechanical Properties	Metric	English	Comments
Elongation at Yield	6.0 %	6.0 %	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
Flexural Yield Strength	73.0 MPa @Strain 3.50 %	10600 psi @Strain 3.50 %	2 mm/min; ISO 178
Flexural Modulus	2.35 GPa	341 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	12.0 kJ/m² @Thickness 3.20 mm, Temperature -30.0 °C	5.71 ft-lb/in² @Thickness 0.126 in, Temperature -22.0 °F	complete break; b.o. ISO 180-A
	65.0 kJ/m² @Thickness 3.20 mm, Temperature 23.0 °C	30.9 ft-lb/in² @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	1.20 J/cm² @Thickness 3.00 mm, Temperature -30.0 °C	5.71 ft-lb/in² @Thickness 0.118 in, Temperature -22.0 °F	complete break; ISO 7391/b.o. ISO 179-1eA
	5.50 J/cm² @Thickness 3.00 mm, Temperature 23.0 °C	26.2 ft-lb/in² @Thickness 0.118 in, Temperature 73.4 °F	partial break; ISO 7391/b.o. ISO 179-1eA
Puncture Energy	55.0 J @Temperature 23.0 °C	40.6 ft-lb @Temperature 73.4 °F	ISO 6603-2
	60.0 J @Temperature -30.0 °C	44.3 ft-lb @Temperature -22.0 °F	ISO 6603-2
Tensile Creep Modulus, 1 hour	2100 MPa	305000 psi	ISO 899-1
Tensile Creep Modulus, 1000 hours	1700 MPa	247000 psi	ISO 899-1

Thermal Properties	Metric	English	Comments
	65.0 µm/m-°C	36.1 µin/in-°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	ISO 11359-1,-2
CTE, linear, Transverse 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
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft²-°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)	124 °C	255 °F	ISO 75-1,-2
Vicat Softening Point	145 °C @Load 5.10 kg	293 °F @Load 11.2 lb	50°C/h; ISO 306
	146 °C @Load 5.10 kg	295 °F @Load 11.2 lb	120°C/h; ISO 306
Glass Transition Temp, Tg	145 °C	293 °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
Flammability, UL94	HB @Thickness 2.90 mm	HB @Thickness 0.114 in	
	V-2 @Thickness 0.750 mm	V-2 @Thickness 0.0295 in	
Flash Point	480 °C	896 °F	ASTM D 1929
	550 °C	1020 °F	self ignition; ASTM D 1929
Glow Wire Test	875 °C @Thickness 0.750 mm	1610 °F @Thickness 0.0295 in	GWIT; IEC 60695-2-13
	875 °C @Thickness 1.50 mm	1610 °F @Thickness 0.0591 in	GWIT; IEC 60695-2-13
	900 °C @Thickness 3.00 mm	1650 °F @Thickness 0.118 in	GWIT; IEC 60695-2-13

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

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
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 @Thickness 1.00 mm	864 kV/in @Thickness 0.0394 in	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 Index	250 V	250 V	Solution A; IEC 60112

Processing Properties	Metric	English	Comments
Melt Temperature	280 °C	536 °F	Injection molding; ISO 294

Processing Properties	Metric	English	Comments
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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