

Styron CALIBRE[®] 203-22 Polycarbonate Resin

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Overview: CALIBRE[®] 200-22 polycarbonate resins are produced in compliance with the US Food and Drug Administration (FDA) and EU food contact regulations. They provide excellent impact resistance, heat distortion resistance and optical clarity. The CALIBRE[®] 200-22 series products are available in 4 additive packages: CALIBRE[®] 200: No mold release or UV Stabilizer. CALIBRE[®] 201: Mold release. CALIBRE[®] 202: UV stabilizer. CALIBRE[®] 203: Mold release and UV stabilizer. (Note that CALIBRE[®] 202 and 203 grades are not available in Europe and do not comply with EU food contact regulations.) Applications: Food utensils, Beverages containers, Food processor housings, Other packaging applications. Govt. and Industry Standards: US FDA 21 CFR 177.1580, CSA Underwriters Laboratory (UL) EU food contact 2002/72/EC. Information provided by Styron

Order this product through the following link:

http://www.lookpolymers.com/polymer_Styron-CALIBRE-203-22-Polycarbonate-Resin.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183/A
Water Absorption	0.32 %	0.32 %	Equilibrium, 50% RH; ISO 62
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
	0.15 %	0.15 %	ISO 62
	@Temperature 23.0 Å°C, Time 86400 sec	@Temperature 73.4 Å°F, Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	ISO 294-4
Melt Flow	22 g/10 min	22 g/10 min	ISO 1133
	@Load 1.20 kg, Temperature 300 Å°C	@Load 2.65 lb, Temperature 572 Å°F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	72	72	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength at Break	65.5 MPa	9500 psi	50 mm/min; ASTM D638
	66.0 MPa	9570 psi	ISO 527-2/50
Tensile Strength, Yield	60.0 MPa	8700 psi	50 mm/min; ASTM D638; ISO 527-2/50
Elongation at Break	120 %	120 %	50 mm/min; ASTM D638
Tensile Modulus	2.30 GPa	334 ksi	ISO 527-2/50

Mechanical Properties	Metric	English	Comments
	MPa		50 mm/min; ASTM D638
Flexural Strength	96.5 MPa	14000 psi	Method I (3 point load), 2.0 mm/min; ASTM D790
	97.0 MPa	14100 psi	2.0 mm/min; ISO 178
Flexural Modulus	2.40 GPa	348 ksi	2.0 mm/min; ISO 178
	2.41 GPa	350 ksi	Method I (3 point load), 2.0 mm/min; ASTM D790
Izod Impact, Notched	7.50 J/cm	14.1 ft-lb/in	ASTM D256
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Izod Impact, Notched (ISO)	74.0 kJ/mÂ²	35.2 ft-lb/inÂ²	ISO 180/4A
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180; ASTM D256A
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Tensile Impact Strength	378 kJ/mÂ²	180 ft-lb/inÂ²	ASTM D1822
Dart Drop, Total Energy	72.3 J	53.3 ft-lb	3.39 m/sec; ASTM D3763
Abrasion	45	45	[%] Taber; ASTM D1004

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.0 Âµm/m-Â°C	37.8 Âµin/in-Â°F	ASTM D696
	@Temperature -40.0 - 82.0 Â°C	@Temperature -40.0 - 180 Â°F	
Hot Ball Pressure Test	125 Â°C	257 Â°F	IEC 60335-1
Deflection Temperature at 0.46 MPa (66 psi)	139 Â°C	282 Â°F	Annealed; ISO 75-2/B; ASTM D648
	142 Â°C	288 Â°F	Unannealed; ISO 75-2/B
Deflection Temperature at 1.8 MPa (264 psi)	126 Â°C	259 Â°F	Unannealed; ASTM D648
	126 Â°C	259 Â°F	Annealed; ISO 75-2/A
	136 Â°C	277 Â°F	Annealed; ASTM D648
Vicat Softening Point	147 Â°C	297 Â°F	Rate A (50Â°C/h); ASTM D1525; ISO 360/B50
	@Load 5.10 kg	@Load 11.2 lb	

Thermal Properties	HB Metric	HB English	Comments
	@Thickness 1.59 mm	@Thickness 0.0626 in	
	HB	HB	
	@Thickness 3.20 mm	@Thickness 0.126 in	
Oxygen Index	26 %	26 %	ISO 4289-2

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542; ISO 489
Haze	1.0 %	1.0 %	ASTM D1003
Transmission, Visible	89 %	89 %	ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+17 ohm-cm	2.00e+17 ohm-cm	ASTM D257
Dielectric Constant	3.0	3.0	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	3.0	3.0	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 50.0 Hz	@Frequency 50.0 Hz	
	0.0020	0.0020	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	250 V	250 V	Solution A; IEC 60112
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Descriptive Properties	Value	Comments
Average Extent of Burring	3 cm	ASTM D635

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