

CALIBRE™ 200-14

Polycarbonate Resin

Overview

CALIBRE™ 200-14 polycarbonate resin is a natural, FDA compliant, 14 melt flow rate general purpose polycarbonate resin with no mold release or UV stabilizer.

Govt. and Industry Standards:

- U.S. FDA 21 CFR 177.1580
- CSA
- Underwriters Laboratory (UL)
- EU food contact 2011/10/EC

Applications

- Food processors
- Beverage containers
- Food utensils
- Other packaging applications

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm ³	1.20 g/cm ³	ASTM D792 ISO 1183/A
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	14 g/10 min	14 g/10 min	ASTM D1238 ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	12 cm ³ /10min	12 cm ³ /10min	ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ASTM D955 ISO 294-4
Water Absorption			ASTM D570 ISO 62
24 hr, 73°F (23°C)	0.15 %	0.15 %	
Equilibrium, 73°F (23°C), 50% RH	0.32 %	0.32 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	340000 psi	2340 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-2/50
Tensile Strength			
Yield ¹	8700 psi	60.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break ¹	10300 psi	71.0 MPa	ASTM D638
Break	10300 psi	71.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	6.0 %	6.0 %	ASTM D638
Yield	6.0 %	6.0 %	ISO 527-2/50
Break ¹	150 %	150 %	ASTM D638
Break	150 %	150 %	ISO 527-2/50
Nominal Tensile Strain at Break	> 50 %	> 50 %	ISO 527-2/50
Flexural Modulus			
-- ³	350000 psi	2410 MPa	ASTM D790
-- ⁴	348000 psi	2400 MPa	ISO 178
Flexural Strength			
-- ³	14000 psi	96.5 MPa	ASTM D790
-- ⁴	14100 psi	97.0 MPa	ISO 178

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Taber Abrasion Resistance	45 %	45 %	ASTM D1044
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	5.7 ft-lb/in ²	12 kJ/m ²	
73°F (23°C)	38 ft-lb/in ²	80 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Notched Izod Impact			
73°F (23°C)	16 ft-lb/in	850 J/m	ASTM D256
73°F (23°C)	39 ft-lb/in ²	82 kJ/m ²	ISO 180/A
Unnotched Izod Impact (73°F (23°C))	No Break	No Break	ASTM D256 ISO 180
Instrumented Dart Impact ⁵			ASTM D3763
73°F (23°C), Total Energy	770 in-lb	87.0 J	
Tensile Impact Strength	220 ft-lb/in ²	462 kJ/m ²	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	72	72	
R-Scale	118	118	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed	289 °F	143 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	260 °F	127 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	261 °F	127 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	284 °F	140 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	298 °F	148 °C	ISO 306/B50 ASTM D1525 ⁶
Ball Indentation Temperature	257 °F	125 °C	IEC 60335-1
CLTE - Flow (-40 to 180°F (-40 to 82°C))	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume Resistivity	2.0E+18 ohms-cm	2.0E+18 ohms-cm	ASTM D257
Dielectric Strength			
--	420 V/mil	17 kV/mm	ASTM D149
--	430 V/mil	17 kV/mm	IEC 60243-1
Dielectric Constant			ASTM D150
60 Hz	3.00	3.00	
1 MHz	3.00	3.00	
Dissipation Factor			ASTM D150
50 Hz	1.0E-3	1.0E-3	
1 MHz	2.0E-3	2.0E-3	
Comparative Tracking Index			IEC 60112
0.0787 in (2.00 mm), Solution A	250 V	250 V	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁷			UL 94
0.06 in (1.6 mm)	HB	HB	
0.13 in (3.2 mm)	HB	HB	
Glow Wire Ignition Temperature ⁷			IEC 60695-2-13
0.08 in (2.0 mm), 5.0 sec	1560 °F	849 °C	
Oxygen Index ⁷	26 %	26 %	ISO 4589-2
Average Extent of Burning	1 in	3 cm	ASTM D635

Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542 ISO 489
Transmittance	89.0 %	89.0 %	ASTM D1003
Haze	1.00 %	1.00 %	ASTM D1003

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ 2.0 in/min (50 mm/min)

² 2.0 in/min (51 mm/min)

³ Method I (3 point load), 0.079 in/min (2.0 mm/min)

⁴ 0.079 in/min (2.0 mm/min)

⁵ 11.1 ft/sec (3.39 m/sec)

⁶ Rate A (50°C/h), Loading 2 (50 N)

⁷ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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