

Technical Information



CALIBRE™ 301-9

Polycarbonate Resin

Overview

CALIBRE™ 301-09 is a general purpose Polycarbonate resin that offers exceptional impact resistance, heat distortion resistance and optical clarity for use in injection moulding. CALIBRE 301-09 is transparent but can be custom colored.

Govt. and Industry Standards:

- Underwriters Laboratory, Inc. (UL)

Applications:

- Appliances
- Storage media housings
- Business equipment
- Electrical & lighting components
- Transportation
- Automotive applications
- Houseware
- Recreation
- Packaging applications
- Power equipment

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm ³	1.20 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	9.0 g/10 min	9.0 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ISO 294-4
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.32 %	0.32 %	
Equilibrium, 73°F (23°C), 50% RH	0.12 %	0.12 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	334000 psi	2300 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-1/1
Tensile Strength			
Yield ²	8700 psi	60.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break ²	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 ²	130 %	130 %	ASTM D638
Break	140 %	140 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- ³	348000 psi	2400 MPa	ISO 178

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Flexural Strength			
--	14000 psi	96.5 MPa	ASTM D790
-- ³	14100 psi	97.0 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	6.2 ft-lb/in ²	13 kJ/m ²	
73°F (23°C)	17 ft-lb/in ²	35 kJ/m ²	
Notched Izod Impact			
73°F (23°C)	16 ft-lb/in	880 J/m	ASTM D256
73°F (23°C)	43 ft-lb/in ²	90 kJ/m ²	ISO 180/1A
Instrumented Dart Impact ⁴			ASTM D3763
73°F (23°C), Total Energy	770 in-lb	87.0 J	
Tensile Impact Strength	248 ft-lb/in ²	522 kJ/m ²	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73	73	
R-Scale	118	118	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed	291 °F	144 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	262 °F	128 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	257 °F	125 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	286 °F	141 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	300 °F	149 °C	ISO 306/B50 ASTM D1525 ⁵
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ISO 11359-2
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Dielectric Strength	420 V/mil	17 kV/mm	ASTM D149
Dissipation Factor			ASTM D150
50 Hz	1.0E-3	1.0E-3	
1 MHz	2.0E-3	2.0E-3	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁶			UL 94
0.12 in (3.0 mm)	HB	HB	
0.06 in (1.5 mm)	V-2	V-2	
Oxygen Index ⁶	26 %	26 %	ISO 4589-2
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ISO 489
Light Transmittance	87.0 to 91.0 %	87.0 to 91.0 %	ASTM D1003
Haze	< 1.00 %	< 1.00 %	ASTM D1003
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	248 °F	120 °C	
Drying Time	4.0 hr	4.0 hr	

Notes

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

¹ 0.039 in/min (1.0 mm/min)

² 2.0 in/min (50 mm/min)

³ 0.079 in/min (2.0 mm/min)

⁴ 11.1 ft/sec (3.39 m/sec)

⁵ Rate A (50°C/h), Loading 2 (50 N)

⁶ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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