

CALIBRE™ 301-6

Polycarbonate Resin

Overview

CALIBRE™ 300-6 Polycarbonate resins offer exceptional impact resistance, heat distortion resistance, and optical clarity as well as high melt strength for blow molding and sheet applications. The CALIBRE 300-6 series products are available in 4 additive packages: CALIBRE 300: No mold release or UV Stabilizer. CALIBRE 301: Mold release. CALIBRE 302: UV stabilizer. CALIBRE 303: Mold release and UV stabilizer.

Govt. and Industry Standards:

- CSA (Canadian Standards Association)
- Underwriters Laboratory, Inc. (UL)

Applications:

- Automotive interiors
- Automotive exteriors
- Sheet applications
- Electrical lighting/switches
- Small & large appliances
- Beverage containers/serviceware
- 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/A
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0 g/10 min	6.0 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	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	350000 psi	2410 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	10500 psi	72.4 MPa	ASTM D638
Break	10400 psi	72.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ¹	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
Flexural Modulus			
-- ²	350000 psi	2410 MPa	ASTM D790
-- ³	348000 psi	2400 MPa	ISO 178

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Flexural Strength			
-- 2	14000 psi	96.5 MPa	ASTM D790
-- 3	14100 psi	97.0 MPa	ISO 178
Taber Abrasion Resistance	45 %	45 %	ASTM D1044
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	26 ft·lb/in ²	55 kJ/m ²	ISO 179/1eA
Notched Izod Impact			
73°F (23°C)	17 ft·lb/in	910 J/m	ASTM D256
73°F (23°C)	44 ft·lb/in ²	93 kJ/m ²	ISO 180/A
Unnotched Izod Impact (73°F (23°C))	No Break	No Break	ASTM D256 ISO 180
Instrumented Dart Impact ⁴			ASTM D3763
73°F (23°C), Total Energy	800 in·lb	90.4 J	
Tensile Impact Strength	280 ft·lb/in ²	588 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	293 °F	145 °C	ASTM D648
66 psi (0.45 MPa), Annealed	295 °F	146 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	265 °F	129 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	259 °F	126 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	288 °F	142 °C	ASTM D648
264 psi (1.8 MPa), Annealed	289 °F	143 °C	ISO 75-2/A
Vicat Softening Temperature	304 °F	151 °C	ISO 306/B50 ASTM D1525 ⁵
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+17 ohms·cm	2.0E+17 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 ⁶			UL 94
0.06 in (1.6 mm)	HB	HB	
0.13 in (3.2 mm)	HB	HB	
Oxygen Index ⁶	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