

CALIBRE™ 302EP-22

Polycarbonate Resin

Overview

CALIBRE™ 300EP-22 Series are polycarbonate resins that offer exceptional impact resistance, heat distortion resistance, and optical clarity for injection molding applications. Their high melt flow rate allows complex parts to be easily molded. The CALIBRE 300EP-22 series products are available in 4 additive packages: CALIBRE 300EP: No mold release or UV Stabilizer. CALIBRE 301EP: Mold release. CALIBRE 302EP: UV stabilizer. CALIBRE 303EP: Mold release and UV stabilizer.

Govt. and Industry Standards:

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

Applications:

- Appliances
- Storage
- Electrical components
- Light diffusers

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm ³	1.20 g/cm ³	ASTM D792 ISO 1183/B
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	22 g/10 min	22 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
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	9500 psi	65.5 MPa	ASTM D638
Break	9430 psi	65.0 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	120 %	120 %	ASTM D638
Break	120 %	120 %	ISO 527-2/50
Flexural Modulus			
-- ²	350000 psi	2410 MPa	ASTM D790
-- ³	348000 psi	2400 MPa	ISO 178
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))	9.5 ft-lb/in ²	20 kJ/m ²	ISO 179/1eA
Notched Izod Impact			
73°F (23°C)	14 ft-lb/in	750 J/m	ASTM D256
73°F (23°C)	35 ft-lb/in ²	74 kJ/m ²	ISO 180/A
Instrumented Dart Impact ⁴			ASTM D3763
73°F (23°C), Total Energy	640 in-lb	72.3 J	
Tensile Impact Strength	180 ft-lb/in ²	378 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	288 °F	142 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	258 °F	126 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	252 °F	122 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	282 °F	139 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	297 °F	147 °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
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)	V-2	V-2	
0.13 in (3.2 mm)	V-2	V-2	
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

Notes

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

¹ Type I, 2.0 in/min (51 mm/min)

² Method I (3 point load), Type I, 0.079 in/min (2.0 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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