

CALIBRE™ 301-19 HMR

Polycarbonate Resin

Overview

CALIBRE™ 301 HMR Polycarbonate resin offers a good balance of impact resistance and processing, heat distortion resistance, and optical clarity. CALIBRE 301 HMR also has a mold release package designed to improve processing larger more complex injection molded parts. Material is transparent but can be custom colored.

Applications:

- Appliances
- Larger transparent parts

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)	19 g/10 min	19 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	120 %	120 %	ASTM D638
Break	120 %	120 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- ³	348000 psi	2400 MPa	ISO 178
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)	5.2 ft-lb/in ²	11 kJ/m ²	
73°F (23°C)	9.5 ft-lb/in ²	20 kJ/m ²	
Notched Izod Impact			
73°F (23°C)	15 ft-lb/in	780 J/m	ASTM D256
73°F (23°C)	38 ft-lb/in ²	80 kJ/m ²	ISO 180/1A

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
66 psi (0.45 MPa), Annealed	289 °F	143 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	259 °F	126 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	255 °F	124 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	282 °F	139 °C	ASTM D648
264 psi (1.8 MPa), Annealed	284 °F	140 °C	ISO 75-2/A
Vicat Softening Temperature	297 °F	147 °C	ISO 306/B50
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
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Oxygen Index ⁴	26 %	26 %	ISO 4589-2
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ISO 489
Light Transmittance (118.1 mil (3000 µm))	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	