

# CALIBRE™ 301-22

## Polycarbonate Resin

### Overview

CALIBRE™ 301-22 Polycarbonate is a high flow injection moulding resin that offers exceptional impact resistance, heat distortion resistance and optical clarity. The high melt flow rate allows complex parts to be easily molded. CALIBRE 301-22 contains mold release and no UV stabilizer.

Govt. and Industry Standards:

- Underwriters Laboratory, Inc. (UL)

Applications:

- Appliances
- Storage
- Electrical & electronics components
- Lighting components

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	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 %	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			
-- <sup>1</sup>	334000 psi	2300 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-1/1
Tensile Strength			
Yield <sup>2</sup>	8700 psi	60.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break <sup>2</sup>	9430 psi	65.0 MPa	ASTM D638
Break	9430 psi	65.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield <sup>2</sup>	6.0 %	6.0 %	ASTM D638
Yield	6.0 %	6.0 %	ISO 527-2/50
Break <sup>2</sup>	120 %	120 %	ASTM D638
Break	120 %	120 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- <sup>3</sup>	348000 psi	2400 MPa	ISO 178
Flexural Strength			
--	14000 psi	96.5 MPa	ASTM D790
-- <sup>3</sup>	14100 psi	97.0 MPa	ISO 178

<b>Impact</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	5.2 ft-lb/in <sup>2</sup>	11 kJ/m <sup>2</sup>	
73°F (23°C)	9.5 ft-lb/in <sup>2</sup>	20 kJ/m <sup>2</sup>	
Notched Izod Impact			
73°F (23°C)	14 ft-lb/in	750 J/m	ASTM D256
73°F (23°C)	35 ft-lb/in <sup>2</sup>	74 kJ/m <sup>2</sup>	ISO 180/A
<b>Thermal</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
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	259 °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 <sup>4</sup>
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.8E-5 in/in/°F	6.9E-5 cm/cm/°C	ISO 11359-2
<b>Flammability</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Flame Rating <sup>5</sup>			UL 94
0.12 in (3.0 mm)	HB	HB	
0.030 in (0.75 mm)	V-2	V-2	
0.06 in (1.5 mm)	V-2	V-2	
Oxygen Index <sup>5</sup>	26 %	26 %	ISO 4589-2
<b>Optical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
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
<b>Injection</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	
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.

<sup>1</sup> 0.039 in/min (1.0 mm/min)

<sup>2</sup> 2.0 in/min (50 mm/min)

<sup>3</sup> 0.079 in/min (2.0 mm/min)

<sup>4</sup> Rate A (50°C/h), Loading 2 (50 N)

<sup>5</sup> This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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