

CALIBRE™ 302-7 Polycarbonate Resin

Overview

CALIBRE™ 302-7 is a standard linear polycarbonate resin designed for solid sheet extrusion. CALIBRE™ 302-7 contains a UV absorber additive, but note that sheets for outdoor applications also require a protective UV cap layer. It is recommended to coextrude a 50 µm thick UV cap layer, using CALIBRE™ 320UV.

Main Characteristics:

- Exceptional impact resistance
- Excellent optical properties
- High heat resistance

Applications:

- Solid sheet applications

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)	7.0 g/10 min	7.0 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			
24 hr, 73°F (23°C)	0.15 %	0.15 %	ASTM D570
73°F (23°C), 24 hr	0.15 %	0.15 %	ISO 62
Equilibrium, 73°F (23°C), 50% RH	0.32 %	0.32 %	ASTM D570 ISO 62
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	330000 psi	2280 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-2/50
Tensile Strength			
Yield ¹	8800 psi	60.7 MPa	ASTM D638
Yield	8850 psi	61.0 MPa	ISO 527-2/50
Break ¹	10400 psi	71.7 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	170 %	170 %	ASTM D638
Break	170 %	170 %	ISO 527-2/50
Flexural Modulus			
-- ²	330000 psi	2280 MPa	ASTM D790
-- ³	334000 psi	2300 MPa	ISO 178
Flexural Strength			
-- ²	13600 psi	93.8 MPa	ASTM D790
-- ³	13300 psi	92.0 MPa	ISO 178
Taber Abrasion Resistance ⁴	20 %	20 %	ASTM D1044

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	15 ft·lb/in ²	32 kJ/m ²	
73°F (23°C)	38 ft·lb/in ²	80 kJ/m ²	
Notched Izod Impact			ASTM D256
-22°F (-30°C)	7.0 ft·lb/in	370 J/m	
73°F (23°C)	17 ft·lb/in	910 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Glass Transition Temperature	300 °F	149 °C	ISO 11357-2 ASTM D3418
Vicat Softening Temperature			
--	297 °F	147 °C	ASTM D1525 ⁵ ISO 306/B50 ⁵
--	307 °F	153 °C	ASTM D1525 ⁶ ISO 306/A120 ⁶
CLTE - Flow (-40 to 180°F (-40 to 82°C))	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁷			UL 94
0.06 in (1.5 mm)	HB	HB	
0.12 in (3.0 mm)	HB	HB	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542 ISO 489
Transmittance	86.0 to 90.0 %	86.0 to 90.0 %	ASTM D1003
Haze	1.0 %	1.0 %	ASTM D1003