



CALIBRE™ 301-6

Trinseo - Polycarbonate Resin

Tuesday, November 5, 2019

General Information

Product Description

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

General

Material Status	• Commercial: Active		
Availability	• Latin America	• North America	
Additive	• Mold Release		
Features	• Good Melt Strength	• High Clarity	• High Impact Resistance
Uses	• Appliances • Automotive Applications • Automotive Exterior Parts	• Automotive Interior Parts • Containers • Electrical/Electronic Applications	• Lighting Applications • Sheet
Agency Ratings	• CSA Unspecified Rating		
Forms	• Pellets		
Processing Method	• Blow Molding • Injection Molding	• Profile Extrusion • Sheet Extrusion	• Thermoforming

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.20		ASTM D792
Density	1.20	g/cm ³	ISO 1183/A
Density	0.0434	lb/in ³	ISO 1183 ²
Melt Mass-Flow Rate (300°C/1.2 kg)	6.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0	g/10 min	ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	5.00	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3	in/in	ASTM D955
Molding Shrinkage - Flow	0.50 to 0.70	%	ISO 294-4
Water Absorption (24 hr, 73°F)	0.15	%	ASTM D570
Water Absorption (24 hr, 73°F)	0.15	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.32	%	ASTM D570
Water Absorption (Equilibrium, 73°F, 50% RH)	0.32	%	ISO 62

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Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ³	350000	psi	ASTM D638
Tensile Modulus	334000	psi	ISO 527-2/50
Tensile modulus	334000	psi	ISO 527-2 ²
Tensile Strength ³ (Yield)	8700	psi	ASTM D638
Tensile Stress (Yield)	8700	psi	ISO 527-2/50
Tensile Stress (Yield)	8700	psi	ISO 527-2 ²
Tensile Strength ³ (Break)	10500	psi	ASTM D638
Tensile Stress (Break)	10400	psi	ISO 527-2/50
Tensile Elongation ³ (Yield)	6.0	%	ASTM D638
Tensile Strain (Yield)	6.0	%	ISO 527-2/50
Tensile Strain (Yield)	6.0	%	ISO 527-2 ²
Tensile Elongation ³ (Break)	150	%	ASTM D638
Tensile Strain (Break)	150	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ²
Flexural Modulus ⁴	350000	psi	ASTM D790
Flexural Modulus ⁵	348000	psi	ISO 178
Flexural Strength ⁴	14000	psi	ASTM D790
Flexural Stress ⁵	14100	psi	ISO 178
Taber Abrasion Resistance	45	%	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	26	ft·lb/in ²	ISO 179/1eA
Charpy notched impact strength (73°F)	45.2	ft·lb/in ²	ISO 179/1eA ²
Charpy notched impact strength (-22°F)	6.66	ft·lb/in ²	ISO 179/1eA ²
Charpy impact strength (73°F)	No Break		ISO 179/1eU ²
Charpy impact strength (-22°F)	No Break		ISO 179/1eU ²
Notched Izod Impact (73°F)	17	ft·lb/in	ASTM D256
Notched Izod Impact Strength (73°F)	44	ft·lb/in ²	ISO 180/A
Unnotched Izod Impact (73°F)	No Break		ASTM D256
Unnotched Izod Impact Strength (73°F)	No Break		ISO 180
Instrumented Dart Impact ⁶ (73°F, Total Energy)	800	in·lb	ASTM D3763
Tensile Impact Strength	280	ft·lb/in ²	ASTM D1822
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73		
R-Scale	118		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Annealed)	293	°F	ASTM D648
Heat Deflection Temperature (66 psi, Annealed)	295	°F	ISO 75-2/B
Deflection Temperature Under Load (66 psi)	293	°F	ISO 75-2 ²
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	265	°F	
Heat Deflection Temperature (264 psi, Unannealed)	259	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi, Annealed)	288	°F	ASTM D648
Heat Deflection Temperature (264 psi, Annealed)	289	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi)	268	°F	ISO 75-2 ²
Vicat Softening Temperature	304	°F	ASTM D1525 ⁷

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Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	304	°F	ISO 306/B50
Vicat Softening Temperature (50°C/h, B (50N))	304	°F	ISO 306 ²
Ball Indentation Temperature	257	°F	IEC 60335-1
CLTE - Flow (-40 to 180°F)	3.8E-5	in/in/°F	ASTM D696
CLTE - Flow	3.9E-5	in/in/°F	ISO 11359-2 ²
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	2.0E+17	ohms·cm	ASTM D257
Volume resistivity	> 3.9E+14	ohms·in	IEC 60093 ²
Dielectric Strength	420	V/mil	ASTM D149
Electric Strength	430	V/mil	IEC 60243-1
Electric strength	430	V/mil	IEC 60243-1 ²
Dielectric Constant			ASTM D150
60 Hz	3.00		
1 MHz	3.00		
Relative Permittivity (100 Hz)	3.00		IEC 60250 ²
Relative Permittivity (1 MHz)	3.00		IEC 60250 ²
Dissipation Factor			ASTM D150
50 Hz	1.0E-3		
1 MHz	2.0E-3		
Dissipation Factor (100 Hz)	1.0E-3		IEC 60250 ²
Dissipation Factor (1 MHz)	2.0E-3		IEC 60250 ²
Comparative Tracking Index (0.0787 in, Solution A)	250	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁸			UL 94
0.06 in	HB		
0.13 in	HB		
Burning Behav. at 1.6mm nom. thickn. (0.06 in, UL)	HB		ISO 1210 ²
Burning Behav. at thickness h (0.126 in, UL)	HB		ISO 1210 ²
Oxygen Index ⁸	26	%	ISO 4589-2
Oxygen index	26	%	ISO 4589-2 ²
Average Extent of Burning	1	in	ASTM D635
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Refractive Index	1.586		ISO 489
Transmittance	89.0	%	ASTM D1003
Haze	1.00	%	ASTM D1003

Notes

¹ Typical properties: these are not to be construed as specifications.

² Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

³ 2.0 in/min

⁴ Method I (3 point load), 0.079 in/min

⁵ 0.079 in/min

⁶ 11.1 ft/sec

⁷ Rate A (50°C/h), Loading 2 (50 N)

⁸ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.