

CALIBRE™ 301-6

Polycarbonate Resin

Trinseo

Message:

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 Information			
UL YellowCard	E54680-469960	E157291-238223	E206114-228275
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		
Physical	Nominal Value	Unit	Test Method

Specific Gravity			
--	1.20	g/cm ³	ASTM D792, ISO 1183/A
--	1200	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	5.00	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.50 to 0.70	%	ASTM D955, ISO 294-4
Water Absorption			ASTM D570, ISO 62
23°C, 24 hr	0.15	%	
Equilibrium, 23°C, 50% RH	0.32	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73		
R-Scale	118		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ³	2410	MPa	ASTM D638
--	2300	MPa	ISO 527-2/50, ISO 527-2 ⁴
Tensile Strength			
Yield ⁵	60.0	MPa	ASTM D638
Yield	60.0	MPa	ISO 527-2/50, ISO 527-2 ⁶
Break ⁷	72.4	MPa	ASTM D638
Break	72.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁸	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50, ISO 527-2 ⁹
Break ¹⁰	150	%	ASTM D638
Break	150	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ¹¹
Flexural Modulus			
-- ¹²	2410	MPa	ASTM D790
-- ¹³	2400	MPa	ISO 178
Flexural Strength			
-- ¹⁴	96.5	MPa	ASTM D790
-- ¹⁵	97.0	MPa	ISO 178
Taber Abrasion Resistance	45	%	ASTM D1044
Average Extent of Burning	3	cm	ASTM D635
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
23°C	55	kJ/m ²	ISO 179/1eA
-30°C	14.0	kJ/m ²	ISO 179/1eA ¹⁶
23°C	95.0	kJ/m ²	ISO 179/1eA ¹⁷
Charpy impact strength			ISO 179/1eU ¹⁸

-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	910	J/m	ASTM D256
23°C	93	kJ/m ²	ISO 180/A
Unnotched Izod Impact (23°C)	No Break		ASTM D256, ISO 180
Instrumented Dart Impact ¹⁹ (23°C, Total Energy)	90.4	J	ASTM D3763
Tensile Impact Strength	588	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed	145	°C	ASTM D648
0.45 MPa, Annealed	146	°C	ISO 75-2/B
0.45 MPa	145	°C	ISO 75-2 ²⁰
1.8 MPa, Unannealed	129	°C	ASTM D648
1.8 MPa, Unannealed	126	°C	ISO 75-2/A
1.8 MPa, Annealed	142	°C	ASTM D648
1.8 MPa, Annealed	143	°C	ISO 75-2/A
1.8 MPa	131	°C	ISO 75-2 ²¹
Vicat Softening Temperature			
--	151	°C	ASTM D1525, ISO 306/B50 8 ²²
50°C/h, B (50N)	151	°C	ISO 306 ²³
Ball Indentation Temperature	125	°C	IEC 60335-1
CLTE - Flow			
-40 to 82°C	6.8E-5	cm/cm/°C	ASTM D696
--	7.0E-5	cm/cm/°C	ISO 11359-2 ²⁴
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			
--	2.0E+17	ohms · cm	ASTM D257
--	> 1.0E+13	ohms · m	IEC 60093 ²⁵
Dielectric Strength	17	kV/mm	ASTM D149, IEC 60243-1
Dielectric Constant			
60 Hz	3.00		ASTM D150
1 MHz	3.00		ASTM D150, IEC 60250 ²⁶
100 Hz	3.00		IEC 60250 ²⁷
Dissipation Factor			
50 Hz	1.0E-3		ASTM D150
1 MHz	2.0E-3		ASTM D150, IEC 60250 ²⁸
100 Hz	1.0E-3		IEC 60250 ²⁹
Comparative Tracking Index (2.00 mm, Solution A)	250	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method

Flame Rating ³⁰			UL 94
1.59 mm	HB		
3.20 mm	HB		
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	HB		ISO 1210 ³¹
Burning Behav. at thickness h (3.20 mm, UL)	HB		ISO 1210 ³²
Oxygen Index ³³	26	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542, ISO 489
Transmittance	89.0	%	ASTM D1003
Haze	1.0	%	ASTM D1003
NOTE			
1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
3.	50 mm/min		
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
5.	50 mm/min		
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
7.	50 mm/min		
8.	50 mm/min		
9.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
10.	50 mm/min		
11.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
12.	Method I (3 point load), 2.0 mm/min		
13.	2.0 mm/min		
14.	Method I (3 point load), 2.0 mm/min		
15.	2.0 mm/min		
16.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		

18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
19.	3.39 m/sec
20.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
21.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
22.	Rate A (50°C/h), Loading 2 (50 N)
23.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
24.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
25.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
26.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
27.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
28.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
29.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
30.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
31.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
32.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
33.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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