CALIBRE™ 302-10

Polycarbonate Resin

Trinseo

Message:

CALIBRE™ 300-10 Polycarbonate resins offer exceptional impact resistance, heat distortion resistance, and optical clarity. The CALIBRE 300-10 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:
Appliances
Storage media housings
Business equipment
Electrical components
Lighting
Transportation
Houseware
Recreation
Packaging applications

General Information			
UL YellowCard	E54680-469961	E157291-238220	E206114-228276
Additive	UV Stabilizer		
Features	High Clarity High Impact Resistance		
Uses	Appliances Business Equipment Electrical/Electronic Applications Household Goods Housings Lighting Applications Packaging		
Agency Ratings	CSA Unspecified Rating		
Forms	Pellets		
Processing Method	Film Extrusion Injection Molding Sheet Extrusion		

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm³	ASTM D792, ISO 1183/A
--	1200	kg/m³	ISO 1183 [1]

Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	8.00	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]	71.0	MPa	ASTM D638
Break	71.0	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	35	kJ/m^2	ISO 179/1eA
-30°C	13.0	kJ/m^2	ISO 179/1eA [16]
23°C	90.0	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	90	kJ/m²	ISO 180/A
Unnotched Izod Impact (23°C)	No Break		ASTM D256, ISO 180
Instrumented Dart Impact [19] (23°C, Total Energy)	87.0	J	ASTM D3763
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, Annealed	144	°C	ASTM D648, ISO 75-2/B
0.45 MPa	145	°C	ISO 75-2 [20]
1.8 MPa, Unannealed	128	°C	ASTM D648
1.8 MPa, Unannealed	125	°C	ISO 75-2/A
1.8 MPa, Annealed	141	°C	ASTM D648, ISO 75-2/A
1.8 MPa	131	°C	ISO 75-2 [21]
Vicat Softening Temperature			
--	149	°C	ASTM D1525, ISO 306/B50 8 [22]
50°C/h, B (50N)	149	°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.	51 mm/min		
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
5.	51 mm/min		
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
7.	51 mm/min		
8.	51 mm/min		
9.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
10.	51 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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