

CALIBRE™ 302-15

Polycarbonate Resin

Trinseo

Message:

CALIBRE™ 300-15 Polycarbonate resins offer exceptional impact resistance, heat distortion resistance, and optical clarity. The CALIBRE 300-15 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	E54680-469961	E157291-238220	E206114-228276
Additive	UV Stabilizer		
Features	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	Injection Molding		
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)	15	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	12.0	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	2340	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	25	kJ/m ²	ISO 179/1eA
-30°C	12.0	kJ/m ²	ISO 179/1eA ¹⁶
23°C	80.0	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	850	J/m	ASTM D256
23°C	83	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)	87.0	J	ASTM D3763
Tensile Impact Strength	462	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed	143	°C	ASTM D648, ISO 75-2/B
0.45 MPa	144	°C	ISO 75-2 ²⁰
1.8 MPa, Unannealed	127	°C	ASTM D648
1.8 MPa, Unannealed	124	°C	ISO 75-2/A
1.8 MPa, Annealed	140	°C	ASTM D648, ISO 75-2/A
1.8 MPa	130	°C	ISO 75-2 ²¹
Vicat Softening Temperature			
--	148	°C	ASTM D1525, ISO 306/B50 8 ²²
50°C/h, B (50N)	148	°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
1.60 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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