CALIBRE™ 203-22
Polycarbonate Resin

Overview

CALIBRE™ 203-22 polycarbonate resins are produced in compliance with the US Food and Drug Administration (FDA) and EU food contact regulations. They provide excellent impact resistance, heat distortion resistance and optical clarity. The CALIBRE 200-22 series products are available in 4 additive packages: CALIBRE 200: No mold release or UV Stabilizer. CALIBRE 201: Mold release. CALIBRE 202: UV stabilizer. CALIBRE 203: Mold release and UV stabilizer. . (Note that CALIBRE 202 and 203 grades are not available in Europe and do not comply with EU food contact regulations).

Govt. and Industry Standards:

- U.S. FDA 21 CFR 177.1580
- CSA
- Underwriters Laboratory (UL)
- EU food contact 2011/10/EC

Applications

- Food processors
- Beverage containers
- Food utensils
- Other packaging applications

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.20	g/cm³	1.20	g/cm³	ASTM D792 ISO 1183/A
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	22	g/10 min	22	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					ASTM D570 ISO 62
24 hr, 73°F (23°C)	0.15	%	0.15	%	
Equilibrium, 73°F (23°C), 50% RH	0.32	%	0.32	%	
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
-- [1]	340000	psi	2340	MPa	ASTM D638
--	334000	psi	2300	MPa	ISO 527-2/50
Tensile Strength					
Yield [1]	8700	psi	60.0	MPa	ASTM D638
Yield	8700	psi	60.0	MPa	ISO 527-2/50
Break [1]	9500	psi	65.5	MPa	ASTM D638
Break	9570	psi	66.0	MPa	ISO 527-2/50
Tensile Elongation					
Break [1]	120	%	120	%	ASTM D638
Break	120	%	120	%	ISO 527-2/50
Flexural Modulus					
-- [2]	350000	psi	2410	MPa	ASTM D790
-- [3]	348000	psi	2400	MPa	ISO 178
Flexural Strength					
-- [2]	14000	psi	96.5	MPa	ASTM D790
-- [3]	14100	psi	97.0	MPa	ISO 178
Taber Abrasion Resistance	45	%	45	%	ASTM D1044

Impact	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Notched Izod Impact					
73°F (23°C)	14	ft·lb/in	750	J/m	ASTM D256
73°F (23°C)	35	ft·lb/in²	74	kJ/m²	ISO 180/A
Unnotched Izod Impact (73°F (23°C))	No Break		No Break		ASTM D256 ISO 180
Instrumented Dart Impact [4]					ASTM D3763
73°F (23°C), Total Energy	640	in·lb	72.3	J	
Tensile Impact Strength	180	ft·lb/in²	378	kJ/m²	ASTM D1822
Hardness	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Rockwell Hardness					ASTM D785
M-Scale	72		72		
R-Scale	118		118		
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Heat Deflection Temperature					
66 psi (0.45 MPa), Unannealed	282	°F	139	°C	ISO 75-2/B
66 psi (0.45 MPa), Annealed	288	°F	142	°C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	258	°F	126	°C	ASTM D648
264 psi (1.8 MPa), Annealed	282	°F	139	°C	ASTM D648
264 psi (1.8 MPa), Annealed	259	°F	126	°C	ISO 75-2/A
Vicat Softening Temperature	297	°F	147	°C	ISO 306/B50 ASTM D1525 [5]
Ball Indentation Temperature	257	°F	125	°C	IEC 60335-1
CLTE - Flow (-40 to 180°F (-40 to 82°C))	3.8E-5	in/in/°F	6.8E-5	cm/cm/°C	ASTM D696
Electrical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Volume Resistivity	2.0E+17	ohms·cm	2.0E+17	ohms·cm	ASTM D257
Dielectric Strength					
--	420	V/mil	17	kV/mm	ASTM D149
--	430	V/mil	17	kV/mm	IEC 60243-1
Dielectric Constant					ASTM D150
60 Hz	3.00		3.00		
1 MHz	3.00		3.00		
Dissipation Factor					ASTM D150
50 Hz	1.0E-3		1.0E-3		
1 MHz	2.0E-3		2.0E-3		
Comparative Tracking Index					IEC 60112
0.0787 in (2.00 mm), Solution A	250	V	250	V	
Flammability	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Flame Rating [6]					UL 94
0.06 in (1.6 mm)	HB		HB		
0.13 in (3.2 mm)	HB		HB		
Oxygen Index [6]	26	%	26	%	ISO 4589-2
Average Extent of Burning	1	in	3	cm	ASTM D635
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Refractive Index	1.586		1.586		ASTM D542 ISO 489
Transmittance	89.0	%	89.0	%	ASTM D1003
Haze	1.00	%	1.00	%	ASTM D1003

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

[1] 2.0 in/min (50 mm/min)

[2] Method I (3 point load), 0.079 in/min (2.0 mm/min)

[3] 0.079 in/min (2.0 mm/min)

[4] 11.1 ft/sec (3.39 m/sec)

[5] Rate A (50°C/h), Loading 2 (50 N)

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

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