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CALIBRE™ 201-22
Polycarbonate Resin

Overview

CALIBRE™ 201-22 polycarbonate resins are produced in compliance with the US Food and Drug Administration (FDA) and EU food contact regulations. This material is a high flow injection moudling grade that offers excellent impact resistance, heat distortion resistance and optical clarity for injection molded processes. Material is transparent but can be custom colored.

Govt. and Industry Standards:

- Europe Commission Regulation (EU) No 10/2011
- U.S. FDA 21 CFR 177.1580 (with Restrictions)
- Underwriters Laboratory, Inc. (UL)

Applications:

- Appliances and food processors
- Housewares and food utensils
- Beverage containers
- Packaging applications

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.20	g/cm³	1.20	g/cm³	ASTM D792 ISO 1183
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	%	ISO 294-4
Water Absorption					ISO 62
Saturation, 73°F (23°C)	0.32	%	0.32	%	
Equilibrium, 73°F (23°C), 50% RH	0.12	%	0.12	%	
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
-- [1]	334000	psi	2300	MPa	ASTM D638
--	334000	psi	2300	MPa	ISO 527-1/1
Tensile Strength					
Yield [2]	8700	psi	60.0	MPa	ASTM D638
Yield	8700	psi	60.0	MPa	ISO 527-2/50
Break [2]	9500	psi	65.5	MPa	ASTM D638
Break	9430	psi	65.0	MPa	ISO 527-2/50
Tensile Elongation					
Yield [2]	6.0	%	6.0	%	ASTM D638
Yield	6.0	%	6.0	%	ISO 527-2/50
Break [2]	120	%	120	%	ASTM D638
Break	120	%	120	%	ISO 527-2/50
Flexural Modulus					
--	350000	psi	2410	MPa	ASTM D790
-- [3]	348000	psi	2400	MPa	ISO 178
Flexural Strength					
--	14000	psi	96.5	MPa	ASTM D790
-- [3]	14100	psi	97.0	MPa	ISO 178

Impact	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Charpy Notched Impact Strength					ISO 179/1eA
-22°F (-30°C)	5.2	ft·lb/in²	11	kJ/m²	
73°F (23°C)	9.5	ft·lb/in²	20	kJ/m²	
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 180/1A
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	73		73		
R-Scale	118		118		

Thermal	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Deflection Temperature Under Load					
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), Unannealed	252	°F	122	°C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	282	°F	139	°C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	297	°F	147	°C	ISO 306/B50 ASTM D1525 [5]
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.8E-5	in/in/°F	6.8E-5	cm/cm/°C	ISO 11359-2

Electrical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Dielectric Strength	420	V/mil	17	kV/mm	ASTM D149
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 (1.5 mm)	HB		HB		
0.12 in (3.0 mm)	HB		HB		
Oxygen Index [6]	26	%	26	%	ISO 4589-2

Optical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Refractive Index	1.586		1.586		ISO 489
Light Transmittance	87.0 to 91.0	%	87.0 to 91.0	%	ASTM D1003
Haze	< 1.00	%	< 1.00	%	ASTM D1003

Injection	Nominal Value	(English)	Nominal Value	(SI)
Drying Temperature	248	°F	120	°C
Drying Time	4.0	hr	4.0	hr

Notes

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

[1] 0.039 in/min (1.0 mm/min)

[2] 2.0 in/min (50 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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