CALIBRE™ 30xEP-31
Polycarbonate Resin

Overview

CALIBRE™ 30xEP-31 MFR Polycarbonate is a high flow injection moulding resin that offers exceptional impact resistance, heat distortion resistance and optical clarity. The high melt flow rate allows complex, thin or long parts to be easily molded. The CALIBRE 300EP-31 series products are available in 2 additive packages: CALIBRE 301EP: Mold release. CALIBRE 303EP: Mold release and UV stabilizer. Material is transparent but can be custom colored.

Govt. and Industry Standards:

- Underwriters Laboratory, Inc. (UL)

Applications:

- Appliances
- Storage media housings
- Electrical & lighting components
- Light diffusers
- Transportation
- Automotive applications
- Houseware
- Recreation
- 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)	31	g/10 min	31	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]	9430	psi	65.0	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]	110	%	110	%	ASTM D638
Break	110	%	110	%	ISO 527-2/50
Flexural Modulus					
--	350000	psi	2410	MPa	ASTM D790
-- [3]	348000	psi	2400	MPa	ISO 178

Mechanical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
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)	7.1	ft·lb/in²	15	kJ/m²	
Notched Izod Impact					
73°F (23°C)	11	ft·lb/in	580	J/m	ASTM D256
73°F (23°C)	33	ft·lb/in²	69	kJ/m²	ISO 180/1A
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	286	°F	141	°C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	257	°F	125	°C	ASTM D648
264 psi (1.8 MPa), Unannealed	250	°F	121	°C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	280	°F	138	°C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	293	°F	145	°C	ISO 306/B50 ASTM D1525 [4]
Ball Indentation Temperature	> 257	°F	> 125	°C	IEC 60335-1
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**
Volume Resistivity	> 1.0E+15	ohms·cm	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Strength					
--	420	V/mil	17	kV/mm	ASTM D149
--	430	V/mil	17	kV/mm	IEC 60243-1
Relative Permittivity					IEC 60250
100 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 [5]					UL 94
0.06 in (1.5 mm)	V-2		V-2		
0.12 in (3.0 mm)	V-2		V-2		
Glow Wire Flammability Index [5]					IEC 60695-2-12
0.04 in (1.0 mm)	1650	°F	900	°C	
0.08 in (2.0 mm)	1610	°F	875	°C	
0.12 in (3.0 mm)	1610	°F	875	°C	
Glow Wire Ignition Temperature [5]					IEC 60695-2-13
0.04 in (1.0 mm)	1470	°F	800	°C	
0.08 in (2.0 mm)	1430	°F	775	°C	
0.12 in (3.0 mm)	1430	°F	775	°C	
Oxygen Index [5]	26	%	26	%	ISO 4589-2

Optical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Refractive Index	1.586		1.586		ISO 489
Light Transmittance (118.1 mil (3000 µm))	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