

Technical Information



CALIBRE™ EV33-22

Advanced Resin

Overview

CALIBRE™ EV33-22 advanced resin is an opaque/translucent, ultraviolet light resistance and ignition resistant polycarbonate resin. This resin contains no chlorinated, brominated or phosphate flame retardant additives and is intended to comply with global environmental standards. It combines mechanical performance and high heat resistance with excellent processing characteristics in injection molded applications. This resin contains mold release and it is UV stabilized.

CALIBRE™ EV33-22 has a UL 94 V-0 rating at 1.5 mm and UL 5VA rating at 3.0 mm.

Applications:

- Tab holder for pouch cell
- Endplate for pouch cell

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm ³	1.20 g/cm ³	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 %	ASTM D955 ISO 294-4
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	334000 psi	2300 MPa	ASTM D638
--	348000 psi	2400 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	8410 psi	58.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	6.0 %	6.0 %	ASTM D638
Break ²	120 %	120 %	ASTM D638
Break	110 %	110 %	ISO 527-2/50
Flexural Modulus ³	348000 psi	2400 MPa	ASTM D790
Flexural Strength ³	13800 psi	95.0 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
73°F (23°C), Injection Molded	9.5 ft-lb/in ²	20 kJ/m ²	
Notched Izod Impact			
73°F (23°C)	11 ft-lb/in	600 J/m	ASTM D256
73°F (23°C), Injection Molded	29 ft-lb/in ²	60 kJ/m ²	ISO 180/A
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed	255 °F	124 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	257 °F	125 °C	ISO 75-2/A
Vicat Softening Temperature	291 °F	144 °C	ISO 306/B50
Ball Indentation Temperature	> 257 °F	> 125 °C	IEC 60335-1
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.6E-5 in/in/°F	6.5E-5 cm/cm/°C	ASTM D696

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	< 1.0E+15 ohms-cm	< 1.0E+15 ohms-cm	IEC 60093
Electric Strength	430 V/mil	17 kV/mm	IEC 60243-1
Dissipation Factor			IEC 60250
50 Hz	1.0E-3	1.0E-3	
1 MHz	2.0E-3	2.0E-3	
Arc Resistance	PLC 7	PLC 7	ASTM D495
Comparative Tracking Index			IEC 60112
0.0787 in (2.00 mm), Solution A	225 V	225 V	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁴			UL 94
0.06 in (1.5 mm)	V-0	V-0	
0.12 in (3.0 mm)	• V-0 • 5VA	• V-0 • 5VA	
Glow Wire Flammability Index ⁴			IEC 60695-2-12
0.08 in (2.0 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.08 in (2.0 mm)	1470 °F	800 °C	
Oxygen Index ⁴	37 %	37 %	ISO 4589-2
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	248 °F	120 °C	
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr	
Processing (Melt) Temp	518 to 554 °F	270 to 290 °C	
Mold Temperature	158 to 230 °F	70 to 110 °C	

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 0.051 in/min (1.3 mm/min)

⁴ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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