

## EMERGE™ PC 8110-10 Advanced Resin

### Overview

EMERGE™ PC 8110-10 advanced resin is an opaque, ignition resistant PC resin that contains no chlorinated, brominated or phosphate flame retardant additives. This resin combines good mechanical and high heat properties and maintains excellent processability, it contains mould release agent. EMERGE™ PC 8110-10 has a UL 94 V-0 rating at 1.0 mm.

Applications:

- Electrical
- Fixtures
- Enclosures
- Display
- Lighting

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10 g/10 min	10 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			
-- <sup>1</sup>	334000 psi	2300 MPa	ASTM D638
--	348000 psi	2400 MPa	ISO 527-1/1
Tensile Strength			
Yield <sup>2</sup>	8700 psi	60.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break <sup>2</sup>	9430 psi	65.0 MPa	ASTM D638
Break	10200 psi	70.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield <sup>2</sup>	6.0 %	6.0 %	ASTM D638
Yield	6.0 %	6.0 %	ISO 527-2/50
Break <sup>2</sup>	120 %	120 %	ASTM D638
Break	110 %	110 %	ISO 527-2/50
Flexural Modulus			
-- <sup>3</sup>	348000 psi	2400 MPa	ASTM D790
-- <sup>4</sup>	341000 psi	2350 MPa	ISO 178
Flexural Strength			
-- <sup>3</sup>	13800 psi	95.0 MPa	ASTM D790
-- <sup>4</sup>	13800 psi	95.0 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	17 ft-lb/in <sup>2</sup>	35 kJ/m <sup>2</sup>	ISO 179/1eA
Notched Izod Impact			
73°F (23°C)	13 ft-lb/in	700 J/m	ASTM D256
73°F (23°C)	33 ft-lb/in <sup>2</sup>	70 kJ/m <sup>2</sup>	ISO 180/1A

<b>Thermal</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed	291 °F	144 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	259 °F	126 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	257 °F	125 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	286 °F	141 °C	ISO 75-2/A
Vicat Softening Temperature	289 °F	143 °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
--	3.9E-5 in/in/°F	7.0E-5 cm/cm/°C	ISO 11359-2
<b>Electrical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
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	
<b>Flammability</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Flame Rating <sup>5</sup>			UL 94
0.031 in (0.8 mm)	V-1	V-1	
0.04 in (1.0 mm)	V-0	V-0	
0.08 in (2.0 mm)	• V-0	• V-0	
	• 5VB	• 5VB	
0.12 in (3.0 mm)	• V-0	• V-0	
	• 5VA	• 5VA	
Glow Wire Flammability Index <sup>5</sup>			IEC 60695-2-12
0.08 in (2.0 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature <sup>5</sup>			IEC 60695-2-13
0.08 in (2.0 mm)	1560 °F	850 °C	
Oxygen Index <sup>5</sup>	37 %	37 %	ISO 4589-2
<b>Injection</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	
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 572 °F	270 to 300 °C	
Mold Temperature	158 to 230 °F	70 to 110 °C	