

EMERGE™ PC 8410-31

Advanced Resin

Overview

EMERGE™ PC 8410-31 advanced resin is a transparent, ignition resistant PC resin that contains no chlorinated, brominated or phosphate flame retardant additives. The resin is designed to meet the German norm DIN VDE-0472/ Part 815 on halogens. This resin combines good mechanical and high heat properties with high flow and maintains excellent processability and contains mould release agent. EMERGE™ PC 8410-31 has a UL 94 V-0 rating at 3.0mm.

Applications:

- Electrical
- Display
- Lighting
- Enclosures

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)	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 %	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	9720 psi	67.0 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	110 %	110 %	ISO 527-2/50
Flexural Modulus			
-- ³	348000 psi	2400 MPa	ASTM D790
-- ⁴	341000 psi	2350 MPa	ISO 178
Flexural Strength			
-- ³	13800 psi	95.0 MPa	ASTM D790
-- ⁴	13800 psi	95.0 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	7.1 ft-lb/in ²	15 kJ/m ²	ISO 179/1eA
Notched Izod Impact			
73°F (23°C)	7.5 ft-lb/in	400 J/m	ASTM D256
73°F (23°C)	26 ft-lb/in ²	55 kJ/m ²	ISO 180/1A

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed	286 °F	141 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	253 °F	123 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	252 °F	122 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	277 °F	136 °C	ISO 75-2/A
Vicat Softening Temperature	286 °F	141 °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
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	
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 ⁵			UL 94
0.030 in (0.75 mm)	V-2	V-2	
0.06 in (1.5 mm)	V-2	V-2	
0.07 in (1.8 mm)	V-0	V-0	
0.12 in (3.0 mm)	V-0	V-0	
Glow Wire Flammability Index ⁵			IEC 60695-2-12
0.08 in (2.0 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature ⁵			IEC 60695-2-13
0.08 in (2.0 mm)	1470 °F	800 °C	
Oxygen Index ⁵	40 %	40 %	ISO 4589-2
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Light Transmittance	87.0 to 91.0 %	87.0 to 91.0 %	ASTM D1003
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	500 to 554 °F	260 to 290 °C	
Mold Temperature	158 to 230 °F	70 to 110 °C	