

EMERGE™ PC 8701HH-12

Advanced Resin

Overview

EMERGE™ PC 8701HH-12 Advanced Resin is an ignition-resistant, glass reinforced, high heat resistant, polycarbonate resin. This resin contains no brominated, chlorinated, or phosphate flame retardant additives. It is a medium flow PC resin with a mold release system, intended for injection molding applications. EMERGE™ PC 8701HH-12 has a UL 94 V-0 rating at 1.5 mm.

Applications:

- Electrical
- Utility [Smart] Meters
- Structural parts

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.28 g/cm ³	1.28 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	12 g/10 min	12 g/10 min	ISO 1133
Molding Shrinkage - Flow	4.0E-3 to 6.0E-3 in/in	0.40 to 0.60 %	ISO 294-4
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	624000 psi	4300 MPa	ISO 527-1/1
Tensile Stress			ISO 527-2/5
Yield	12300 psi	85.0 MPa	
Break	7250 psi	50.0 MPa	
Tensile Strain (Break)	10 %	10 %	ISO 527-2/5
Flexural Modulus ¹	595000 psi	4100 MPa	ISO 178
Flexural Stress ¹	20200 psi	139 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	2.9 ft-lb/in ²	6.0 kJ/m ²	ISO 179/1eA
Notched Izod Impact Strength (73°F (23°C))	3.3 ft-lb/in ²	7.0 kJ/m ²	ISO 180/1A
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	286 °F	141 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	279 °F	137 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	282 °F	139 °C	ISO 75-2/A
Vicat Softening Temperature	293 °F	145 °C	ISO 306/B50
Ball Indentation Temperature	> 266 °F	> 130 °C	IEC 60335-1
CLTE - Flow (5 to 149°F (-15 to 65°C))	2.2E-5 in/in/°F	4.0E-5 cm/cm/°C	ASTM E831
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	1.0E+14 ohms	1.0E+14 ohms	IEC 60093
Volume Resistivity	1.0E+16 ohms-cm	1.0E+16 ohms-cm	IEC 60093
Electric Strength	1800 V/mil	70 kV/mm	IEC 60243-1
Dielectric Constant			IEC 60250
0.0787 in (2.00 mm), 50 Hz	3.00	3.00	
0.0787 in (2.00 mm), 1 MHz	3.10	3.10	
Dissipation Factor			IEC 60250
50 Hz	8.0E-3	8.0E-3	
1 MHz	0.016	0.016	
Comparative Tracking Index			IEC 60112
0.118 in (3.00 mm), Solution A	200 V	200 V	

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ²			UL 94
0.06 in (1.5 mm)	V-0	V-0	
0.12 in (3.0 mm)	5V	5V	
Glow Wire Flammability Index ²			IEC 60695-2-12
0.04 in (1.0 mm)	1760 °F	960 °C	
0.08 in (2.0 mm)	1760 °F	960 °C	
0.12 in (3.0 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature ²			IEC 60695-2-13
0.04 in (1.0 mm)	1560 °F	850 °C	
0.08 in (2.0 mm)	1560 °F	850 °C	
0.12 in (3.0 mm)	1560 °F	850 °C	
Oxygen Index ²	38 %	38 %	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	545 to 599 °F	285 to 315 °C	
Mold Temperature	176 to 230 °F	80 to 110 °C	