

EMERGE™ PC 8830-5 LT Advanced Resin

Overview

EMERGE™ PC 8830-5 LT Advanced Resin is a transparent, ignition resistant PC resin that contains no chlorinated, brominated or phosphate flame retardant additives, designed to meet the German norm DIN VDE-0472/Part 815 on halogens. This resin combines good mechanical and heat resistant properties, ensuring longer sustained aesthetics and mechanical resistance to the applications. EMERGE™ PC 8830-5LT has a UL 94 V-0 rating at 1.0 mm, 5VA @ 3mm and UL746C f1 rating. The material contains mould release agent and UV stabilizer.

Applications

- LED Tube, LED lamp Lens
- Electrical parts

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)	5.0 g/10 min	5.0 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	9280 psi	64.0 MPa	ISO 527-2/50
Break ²	9430 psi	65.0 MPa	ASTM D638
Break	8560 psi	59.0 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	325000 psi	2240 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))	7.6 ft-lb/in ²	16 kJ/m ²	ISO 179/1eA
Notched Izod Impact			
73°F (23°C)	14 ft-lb/in	750 J/m	ASTM D256
73°F (23°C)	6.2 ft-lb/in ²	13 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	291 °F	144 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	261 °F	127 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	262 °F	128 °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
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
Arc Resistance	PLC 7	PLC 7	ASTM D495
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁵			UL 94
0.04 in (1.0 mm)	V-0	V-0	
0.08 in (2.0 mm)	• V-0 • 5VB	• V-0 • 5VB	
0.12 in (3.0 mm)	• V-0 • 5VA	• V-0 • 5VA	
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
0.10 in (2.5 mm)	1520 °F	825 °C	
Oxygen Index ⁵	35 %	35 %	ISO 4589-2
Optical	Nominal Value (English)	Nominal Value (SI)	
Light Transmittance	87.0 to 91.0 %	87.0 to 91.0 %	
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	
Rear Temperature	536 to 572 °F	280 to 300 °C	
Middle Temperature	536 to 590 °F	280 to 310 °C	
Front Temperature	554 to 608 °F	290 to 320 °C	
Nozzle Temperature	554 to 608 °F	290 to 320 °C	
Processing (Melt) Temp	518 to 572 °F	270 to 300 °C	
Mold Temperature	158 to 230 °F	70 to 110 °C	