

Technical Information



LUPOY PC UF1004D

Polycarbonate Resin

Introduction

LUPOY PC UF1004D resin is designed for Light guide panel application. It exhibits an excellent flow-ability, thermal resistance and good Optical properties.

Main Characteristics

- Very low viscosity
- Good optical properties
- Thermal stability

Applications

- Light guide panel

Properties ¹	Test Method	English Value	Units	SI Value	Units
Physical					
Melt Flow Rate (300 °C /1.2 kg)	ASTM D 1238	45	g/10 min	45	g/10 min
Density	ASTM D 792	1.20		1,200	kg/m ³
Mold Shrinkage	ASTM D 955	0.005~0.007	in/in	0.005~0.007	mm/mm
Water Absorption @ 24 hrs, 23°C	ASTM D 570	0.15	%	0.15	%
@ equilibrium, 50%RH, 23°C	ASTM D 570	0.32	%	0.32	%
Optical					
Refractive Index, n _D	ASTM D 542	1.583		1.583	
Light Transmittance	ASTM D 1003	91	%	91	%
Haze	ASTM D 1003	0.1~1.0	%	0.1~1.0	%
Thermal					
Deflection Temperature Under Load (DTUL) @ 4 mm @ 66 psi (0.45 MPa), annealed	ASTM D 648	275	°F	135	°C
@ 264 psi (1.80 MPa), annealed		255	°F	124	°C
Vicat Softening Point, 50°C /hr, 50N Load	ASTM D 1525	287	°F	142	°C
Coefficient of Linear Thermal Expansion, @ -40 to 82°C	ASTM D 696	38 x 10 ⁻⁶	in/in/°F	68 x 10 ⁻⁶	mm/mm/°C
Mechanical					
Tensile Yield Strength ²	ASTM D 638	8,700	psi	60	MPa
Ultimate Tensile Strength	ASTM D 638	7,000	psi	48	MPa
Elongation at Yield	ASTM D 638	6	%	6	%
Elongation at Break	ASTM D 638	90	%	90	%
Tensile Modulus	ASTM D 638	290,000	psi	2,000	MPa
Flexural Strength	ASTM D 790	14,500	psi	100	MPa
Flexural Modulus	ASTM D 790	319,000	psi	2,200	MPa
Notched Izod Impact ³ @ 23 °C	ASTM D 256	12	ft-lb/in	650	J/m
Instrumented Dart Impact ⁴ , Total Energy @ 23 °C	ASTM D 3763	520	in-lb	59	J
Rockwell Hardness	ASTM D 785	124	R Scale	58	M Scale
Ignition Resistance ⁵					
UL-94 @ 0.4 mm	ASTM D635	V-2		V-2	
UL-94 @ 1.5 mm	ASTM D635	V-2		V-2	
UL-94 @ 3.0 mm	ASTM D635	V-2		V-2	

1. Typical properties; not to be constructed as specifications

2. Tensile Test @ 23°C; 50 mm/min.

3. 0.125 in; 10 mil notch (3.2 mm; 0.25 mm notch).

4. 0.125 in; 8000 ipm (3.2 mm; 203 m/min).

5. These numerical flame spread ratings are small-scale test values and are not intended to reflect hazards presented by these or any other materials under actual fire conditions. UL 94 file: E67171.