

LUPOY PC 1302-05

Polycarbonate Resin

Introduction

LUPOY 1302-5 resin is designed for extrusion and injection molding products. It exhibits an excellent physical property balance of heat resistance, transparency and impact strength.

Main Characteristics

- UV stabilizer¹
- High viscosity
- 0% UV light transmittance at wavelength below 380 nm

Applications

- Sheet
- Appliances
- Optical lens
- Film

Properties ²	Test Method	English		SI	
		Value	Units	Value	Units
Physical					
Melt Flow Rate (300 °C /1.2 kg)	ASTM D 1238	5	g/10 min	5	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	1.586		1.586	
Light Transmittance	ASTM D 1003	89	%	89	%
Haze	ASTM D 1003	0.7~1.5	%	0.7~1.5	%
Thermal					
Deflection Temperature Under Load (DTUL) @ 4 mm @ 66 psi (0.45 MPa), annealed	ASTM D 648	295	°F	146	°C
@ 264 psi (1.8 MPa), annealed		289	°F	143	°C
@ 264 psi (1.8 MPa), unannealed		270	°F	132	°C
Vicat Softening Point, 50°C/hr, 50N Load	ASTM D 1525	304	°F	151	°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	ASTM D 638	8,700	psi	60	MPa
Ultimate Tensile Strength	ASTM D 638	10,500	psi	72	MPa
Elongation at Yield	ASTM D 638	6	%	6	%
Elongation at Break	ASTM D 638	150	%	150	%
Tensile Modulus	ASTM D 638	350,000	psi	2,410	MPa
Flexural Strength	ASTM D 790	14,000	psi	96	MPa
Flexural Modulus	ASTM D 790	350,000	psi	2,410	MPa
Notched Izod Impact ³ @ 23 °C	ASTM D 256	18	ft-lb/in	950	J/m
Unnotched Izod Impact @ 23 °C	ASTM D 256	No break		No break	
Instrumented Dart Impact ⁴ , Total Energy @ 23 °C	ASTM D 3763	830	in-lb	94	J
Rockwell Hardness	ASTM D 785	118	R Scale	74	M Scale
Taber Abrasion Resistance ⁵ (Δ Haze)	ASTM D 1044	45	%	45	%
Ignition Resistance⁶					
UL-94 @ 0.5 mm	ASTM D635	V-2		V-2	
UL-94 @ 1.6 mm	ASTM D635	V-2		V-2	
UL-94 @ 2.5 mm	ASTM D635	V-2		V-2	
UL-94 @ 3.0 mm	ASTM D635	V-2		V-2	
Limiting Oxygen Index	ASTM D 2863	26	%	26	%
Ball Indentation Temperature	IEC 598-1	>125	°C	>125	°C
Average Extent of Burning	ASTM D 635	1	in	25	mm
Electrical					
GWT 2.0 mm, 5 second	IEC 695-2-1	850	°C	850	°C
Compression Tracking Index @ 2.0 mm	IEC 112	250	V	17	V
Dielectric Strength	ASTM D 149	420	V/mil	15	KV/mm
Dielectric Constant @ 60 Hz	ASTM D 150	3		3	
Dissipation Factor @ 60 Hz	ASTM D 150	0.001		0.001	
Volume Resistivity @ 23 °C, dry	ASTM D 257	2.0 x 10 ¹⁷	Ω-cm	2.0 x 10 ¹⁷	Ω-cm

1. The addition of an UV stabilizer to a resin does not completely eliminate the effects of UV exposure but to slow down the rate at which the effects occur. These effects may include color shift, decreased mechanical properties, and/or optical properties. Actual results may vary depending on application and other factors such as resin color, transparency and additives. Therefore, actual end-use testing is recommended.

2. Typical properties; not to be constructed as specifications.

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. 1,000 g; CS-10 F wheel; 500 cycles.

6. 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.