

## LUPOY PC 1301EP-22

Polycarbonate Resin

### Introduction

LUPOY PC 1301EP-22 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

- Low viscosity
- Good mold release

### Applications

- Applicances
- Mobile phone keypads
- Rigid packaging applications

Properties <sup>1</sup>	Test Method	English		SI	
		Value	Units	Value	Units
<b>Physical</b>					
Melt Flow Rate (300 °C /1.2 kg)	ASTM D 1238	22	g/10 min	22	g/10 min
Density	ASTM D 792	1.20		1,200	kg/m <sup>3</sup>
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	%
<b>Optical</b>					
Refractive Index, n <sub>D</sub>	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	%
<b>Thermal</b>					
Deflection Temperature Under Load (DTUL) @ 4 mm @ 66 psi (0.45 MPa), annealed	ASTM D 648	288	°F	142	°C
@ 264 psi (1.8 MPa), annealed		282	°F	139	°C
@ 264 psi (1.8 MPa), unannealed		258	°F	126	°C
Vicat Softening Point, 50°C/hr, 50N Load	ASTM D 1525	297	°F	147	°C
Coefficient of Linear Thermal Expansion, @ -40 to 82°C	ASTM D 696	38 x 10 <sup>-6</sup>	in/in/°F	68 x 10 <sup>-6</sup>	mm/mm/°C
<b>Mechanical</b>					
Tensile Yield Strength <sup>2</sup>	ASTM D 638	8,700	psi	60	MPa
Ultimate Tensile Strength	ASTM D 638	9,500	psi	66	MPa
Elongation at Yield	ASTM D 638	6	%	6	%
Elongation at Break	ASTM D 638	120	%	120	%
Tensile Modulus	ASTM D 638	340,000	psi	2,340	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 <sup>3</sup> @ 23 °C	ASTM D 256	14	ft-lb/in	750	J/m
Unnotched Izod Impact @ 23 °C	ASTM D 256	No break		No break	
Instrumented Dart Impact <sup>4</sup> , Total Energy @ 23 °C	ASTM D 3763	640	in-lb	72	J
Rockwell Hardness	ASTM D 785	118	R Scale	72	M Scale
Taber Abrasion Resistance <sup>5</sup> (Δ Haze)	ASTM D 1044	45	%	45	%
<b>Ignition Resistance<sup>6</sup></b>					
UL-94 @ 0.5 mm	ASTM D635	V-2		V-2	
UL-94 @ 1.6 mm	ASTM D635	V-2		V-2	
UL-94 @ 2.5-2.7 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
<b>Electrical</b>					
GWT 2.0 mm, 5 second	IEC 695-2-1	850	°C	850	°C
Comparative Tracking Index @ 2.0 mm	IEC 112	250	V	250	V
Dielectric Strength	ASTM D 149	420	V/mil	17	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 <sup>17</sup>	Ω-cm	2.0 x 10 <sup>17</sup>	Ω-cm

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. 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.