

# LUPOY 3010-22

Polycarbonate Resin

## Introduction

LUPOY PC 3010-22 resin is designed for injection molding products. It exhibits an excellent physical property balance of heat resistance, transparency and impact strength.

## Main Characteristics

- FDA<sup>1</sup>
- Improved chemical resistance
- Enhanced flowability while retaining high toughness

## Applications

- Appliances
- Thin wall parts
- Electronic/Electrical parts

Properties <sup>2</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
Spiral flow length <sup>3</sup>		11	in	29	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	ASTM D 648	288	°F	142	°C
@ 66 psi (0.45 MPa), annealed		282	°F	139	°C
@ 264 psi (1.8 MPa), annealed		258	°F	126	°C
@ 264 psi (1.8 MPa), unannealed					
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>4</sup>	ASTM D 638	9,000	psi	62	MPa
Ultimate Tensile Strength	ASTM D 638	8,700	psi	60	MPa
Elongation at Yield	ASTM D 638	6	%	6	%
Elongation at Break	ASTM D 638	100	%	100	%
Tensile Modulus	ASTM D 638	348,000	psi	2,400	MPa
Flexural Strength	ASTM D 790	14,000	psi	96	MPa
Flexural Modulus	ASTM D 790	348,000	psi	2,400	MPa
Notched Izod Impact <sup>5</sup> @ 23 °C	ASTM D 256	15	ft-lb/in	800	J/m
Unnotched Izod Impact @ 23 °C	ASTM D 256	No break		No break	
Instrumented Dart Impact <sup>6</sup> , Total Energy @ 23 °C	ASTM D 3763	800	in-lb	87	J
Rockwell Hardness	ASTM D 785	118	R Scale	72	M Scale
Taber Abrasion Resistance <sup>7</sup> (Δ Haze)	ASTM D 1044	45	%	45	%
<b>Ignition Resistance<sup>8</sup></b>					
UL-94 @ 0.5-2.5 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
<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. When used unmodified for the manufacture of food contact articles LUPOY 3010 series Polycarbonate resins comply with the U.S. Food, Drug, and Cosmetic Act and Food Additive Regulations 21 CFR 177.1580 and E.U. Food Contact Regulations. The uses cited above are subject to GMP (Good Manufacturing Practices) and any limitations that are part of the regulations. The regulations should be consulted for complete details.

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

3. Melt temperature at 330°C; Spiral mold 1.5 x 6 mm; 17 mm for 22MFR PC resins

4. Tensile Test @ 23 °C; 50 mm/min.

5. 0.125 in; 10 mil notch (3.2 mm; 0.25 mm notch).

6. 0.125 in; 8000 ipm (3.2 mm; 203 m/min).

7. 1,000 g; CS-10 F wheel; 500 cycles.

8. 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.