

## Zelux® (Glass filled polycarbonate)

Zelux polycarbonate is an engineering plastic with excellent dimensional stability and good strength and stiffness over a wide range of service temperatures. Zelux is used for a wide variety of electrical applications since it has low moisture absorption, good insulating properties, and an excellent flammability rating. Zelux is easy to fabricate, paint, and glue.

The following physical property information is based on typical values of the base polycarbonate resin.

### Applications:

- Impact shields
- Fluid handling components
- Electrical components
- Scientific and analytical instrument components
- Manifolds
- Housings and covers

### Advantages:

- Excellent impact resistance
- Excellent dimensional stability
- Low moisture absorption
- Easy to machine
- Easy to fabricate, paint and glue
- Optical clarity (window grade)
- Good electrical insulating properties
- Excellent flammability rating (UL94V-0 rate @ 3/8" thick)
- Good strength and stiffness over a wide range of service temperatures

Property	ASTM Test Method	Units	10% GF	20% GF	30% GF	40% GF
<b>Physical</b>						
Specific Gravity	D792	—	1.27	1.35	1.43	1.52
Water Absorption @24 hours @Equilibrium	D570	%	0.12	0.16	0.14	0.12
	D570	%	0.31	0.29	0.26	0.23
<b>Mechanical</b>						
Compressive Strength	D695	psi	14,000	16,000	18,000	21,000
Flexural Modulus	D790	psi	500,000	800,000	960,000	1,400,000
Flexural Strength @yield	D790	psi	15,000	19,000	22,200	27,000
Hardness-Rockwell M	D785	—	M85	M91	M92	M93
Hardness-Rockwell R	D785	—	R124	R122	R120	R119
Izod Impact Strength Notched	D256	ft-lb/in	2.0	2.0	2.0	2.5
	D256	ft-lb/in	40.0	19.0	21.0	24.0
Tensile Elongation @break @yield	D638	%	15.0	5.0	3.0	3.0
	D638	%	8.0	—	—	—
Tensile Modulus	D638	psi	450,000	860,000	1,250,000	1,680,000
Tensile Strength @break @yield	D638	psi	8,000	16,000	14,500	23,000
	D638	psi	9,600	—	—	—
<b>Thermal</b>						
Coefficient of Thermal Expansion	E831	in/in/°F	1.8x10 <sup>-5</sup>	1.5x10 <sup>-5</sup>	1.21x10 <sup>-5</sup>	9.0x10 <sup>-6</sup>
Flammability Rating-UL94 @ .058" @ .044"	—	—	V-0	V-1	V-1	—
	—	—	—	—	—	V-1
Heat Deflection Temperature @66 psi @264 psi	D648	°F	295	300	305	310
	D648	°F	288	295	295	295
Thermal Conductivity	C177	(BTU•in)/(hr•ft <sup>2</sup> •°F)	1.39	1.46	1.53	1.53
<b>Electrical</b>						
Dielectric Constant @60Hz @1MHz	D150	—	3.10	3.17	3.35	3.53
	D150	—	3.05	3.13	3.31	3.48
Dielectric Strength	D149	V/mil	450	490	475	450
Dissipation Factor @60Hz @1MHz	D150	—	0.0008	0.0009	0.0011	0.0013
	D150	—	0.0075	0.0073	0.0070	0.0067
Volume Resistivity	D257	ohm-cm	<10 <sup>17</sup>	<10 <sup>17</sup>	<10 <sup>17</sup>	<10 <sup>17</sup>

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.