

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 Include:

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

Advantages of Zelux:

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

Property	ASTM Test Method	Units	10% GF	20% GF	30% GF	40% GF
Physical						
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
Mechanical						
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 Un-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	—	—	—
Thermal						
Coefficient of Thermal Expansion	E831	in/in/°F	1.8x10 ⁻⁵	1.5x10 ⁻⁵	1.21x10 ⁻⁵	9.0x10 ⁻⁶
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 ² •°F)	1.39	1.46	1.53	1.53
Electrical						
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	<1.0x10 ¹⁷	<1.0x10 ¹⁷	<1.0x10 ¹⁷	<1.0x10 ¹⁷

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.



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