

TECHNICAL DATA SHEET

Zelux (PC)

(polycarbonate)

Zelux polycarbonate is a transparent engineering plastic with excellent dimensional stability and good mechanical and electrical properties. It is used for structural applications when clarity and impact strength are essential including lenses, manifolds, site glasses, and machine guards. Zelux is used for a wide range of electrical applications since it has low moisture absorption and good insulating properties.

Zelux Colors/Grades

Zelux W - Window grade (optically clear)

Zelux M - Machine grade, stress-relieved (natural and black)

Zelux M-GF - 10%, 20%, 30%, and 40% Glass-filled grades (black)

FDA compliant grades and colors are available on a custom basis

TYPICAL PROPERTIES of POLYCARBONATE

ASTM or UL test	Property	Unfilled	30% Glass
PHYSICAL			
D792	Density (lb/in ³) (g/cm ³)	0.043 1.2	0.052 1.43
D570	Water Absorption, 24 hrs (%)	0.12	0.12
MECHANICAL			
D638	Tensile Strength (psi)	9,500	19,000
D638	Tensile Modulus (psi)	320,000	-
D638	Tensile Elongation at Break (%)	60	10
D790	Flexural Strength (psi)	15,000	23,000
D790	Flexural Modulus (psi)	375,000	1,100,000
D695	Compressive Strength (psi)	12,000	18,000
D695	Compressive Modulus (psi)	240,000	500,000
D785	Hardness, Rockwell	M70 / R118	M92
D256	IZOD Notched Impact (ft-lb/in)	13	2
THERMAL			
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	3.9	1.2
D648	Heat Deflection Temp (°F / °C) at 264 psi	270 / 132	295 / 146
D3418	Glass Transition Temp (°F / °C)	293 / 145	300 / 149
-	Max Operating Temp (°F / °C)	250 / 121	270 / 132
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	1.3 6.9	1.3 6.9
UL94	Flammability Rating @ less than .45" (11.5mm) thickness @ .45" (11.5mm) thickness and above	H-B V-0	H-B V-0
ELECTRICAL			
D149	Dielectric Strength (V/mil) short time, 1/8" thick	390	470
D150	Dielectric Constant at 60 Hz	3.17	3.35
D150	Dissipation Factor at 60 Hz	0.0009	0.0011
D257	Volume Resistivity (ohm-cm) at 50% RH	10 ¹⁶	10 ¹⁶

Benefits

- Optical clarity (window grade)
- Excellent impact resistance
- Excellent dimensional stability
- Low moisture absorption
- Easy to machine
- Easy to fabricate, paint and bond
- Good strength & stiffness over a wide temp range
- Good electrical insulating properties

Applications

- Site glasses
- Viewing windows
- Impact shields
- Fluid handling components
- Manifolds
- Scientific & analytical instrument components
- Electrical components
- Housing and covers

SHAPES AVAILABLE



SEE NEXT PAGE FOR ADDITIONAL INFORMATION

LEXAN is a registered trademark of SABIC Innovative Polymers (formerly GE Plastics). ZELUX is a registered trademark of Westlake Plastics.

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.



TYPICAL PROPERTIES of STATIC-CONTROL POLYCARBONATE

ASTM or UL test	Property	Zelux® SD-P	Zelux® CN-P	Zelux® CN-SS
-	Classification	Anti-Static	Conductive	Conductive
-	Filler Material	Carbon Powder	Carbon Powder	Stainless Steel
PHYSICAL				
D792	Density (lb/in ³) (g/cm ³)	0.034 0.94	0.036 1.00	0.034 0.95
D570	Water Absorption, 24 hrs (%)	<1.0	0.02	0.01
MECHANICAL				
D638	Tensile Strength (psi)	4,400	2,600	6,000
D638	Tensile Modulus (psi)	-	-	-
D638	Tensile Elongation at Yield (%)	200	25	5
D790	Flexural Strength (psi)	6,200	3,000	8,000
D790	Flexural Modulus (psi)	200,000	80,000	620,000
D695	Compressive Strength (psi)	-	-	-
D695	Compressive Modulus (psi)	-	-	-
D785	Hardness, Rockwell R	-	-	-
D256	IZOD Notched Impact (ft-lb/in)	1.4	NoBreak	1.0
THERMAL				
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	-	-	-
D648	Heat Deflection Temp (°F / °C) at 66 psi at 264 psi	- 135 / 57	- 125 / 52	- 215 / 102
D3418	Melting Temperature (°F / °C)	320 / 160	320 / 160	320 / 160
-	Max Operating Temp (°F / °C)	180 / 82	180 / 82	180 / 82
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	- -	- -	- -
UL94	Flammability Rating	V-0	V-0	V-0
ELECTRICAL				
D257	Surface Resistivity (ohms/sq)	10 ⁹ -10 ¹¹	10 ² -10 ⁶	10 ² -10 ⁶
D257	Volume Resistivity (ohm-cm) at 73°F, 50% RH	10 ⁹ -10 ¹¹	10 ² -10 ⁶	10 ² -10 ⁶

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