

## Westlake Plastics Zelux® M Machine Grade Polycarbonate

**Subcategory:** Polycarbonate; Polymer; Thermoplastic

### Material Notes:

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.

Information provided by Westlake Plastics.

Physical Properties	Metric	English	Comments
Density	1.2 g/cc	0.0434 lb/in <sup>3</sup>	ASTM D792
Water Absorption	0.15 %	0.15 %	ASTM D570; 24 hrs.
Water Absorption at Saturation	0.35 %	0.35 %	ASTM D570; at equilibrium
<b>Mechanical Properties</b>			
Hardness, Rockwell M	70	70	ASTM D7852
Hardness, Rockwell R	118	118	ASTM D7852
Tensile Strength @ Break	68.9 MPa	10000 psi	ASTM D638
Tensile Strength @ Yield	62.1 MPa	9000 psi	ASTM D638
Elongation at Break	135 %	135 %	ASTM D638
Elongation at Yield	7 %	7 %	ASTM D638
Flexural Modulus	2.34 GPa	340 ksi	ASTM D790
Flexural Yield Strength	97.9 MPa	14200 psi	ASTM D790
Compressive Strength	86.2 MPa	12500 psi	ASTM D695
Compressive Modulus	2.38 GPa	345 ksi	ASTM D695
Izod Impact, Unnotched	NB	NB	ASTM D256
Izod Impact, Notched	9.08 J/cm	17 ft-lb/in	ASTM D256
<b>Electrical Properties</b>			
Volume Resistivity	1e+017 ohm-cm	1e+017 ohm-cm	ASTM D257
Dielectric Constant	3.17	3.17	ASTM D150; at 60Hz
Dielectric Strength	38 kV/mm	965 kV/in	ASTM D149
Dissipation Factor	0.0009	0.0009	ASTM D150; at 60Hz
<b>Thermal Properties</b>			
CTE, linear 68°F	68.4 µm/m-°C	38 µin/in-°F	ASTM D696
Thermal Conductivity	0.19 W/m-K	1.32 BTU-in/hr-ft <sup>2</sup> -°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	138 °C	280 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	132 °C	270 °F	ASTM D648
Flammability, UL94	V-0	V-0	0.375"
<b>Optical Properties</b>			
Haze	1 %	1 %	ASTM D1746