



## TEMPALUX® POLYETHERIMIDE

As an amorphous polymer, stock shapes made from PEI offer a combination of useful characteristics, including high strength at elevated temperatures, high modulus, and broad chemical resistance. Tempalux stock shapes are inherently flame resistant with low smoke emission. Tempalux stock shapes display property retention and resistance to environmental stress cracking when exposed to a wide variety of chemicals. The standard color of Tempalux stock shapes is light amber. Glass filled grades appear tan or greenish in color. Tempalux rod and slab are air annealed to minimize residual stress.

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

### Applications Include:

- Burn-in test sockets
- Connectors
- Automotive components
- Valves, electrical fittings

### Advantages of Tempalux:

- Inherent flame resistance
- Extremely low NBS smoke evolution
- Superior limiting oxygen index
- Exceptional tensile and flexural strength
- Broad chemical resistance
- UV stable
- FDA compliant

### Manufacturing Capabilities:

- **Rod** (unfilled): 1/4" to 8" dia.
- **Sheet** (unfilled): .035" to 1/4" thick
- **Sheet** (filled): 3/8" to 3" thick
- **Slab**: 3/8" to 4" thick
- **Film** (unfilled): .001" to .029" thick

### Colors/Grades:

- Amber - unfilled
- Tan/Green - glass filled
- Colors available on a custom basis

In addition to our standard capabilities, Westlake also has the ability to process custom resins in various sizes and colors with some exceptions.

Property	Units	Test Standard	Unfilled	20% GF	30% GF
<b>Mechanical</b>					
Tensile Strength					
@yield	psi	ASTM D638	16,000	20,100	24,500
@break	psi	ASTM D638	13,100	19,000	23,000
Tensile Modulus	psi	ASTM D638	520,000	1,000,000	1,350,000
Tensile Elongation @yield	%	ASTM D638	7.0	—	—
Tensile Elongation @break	%	ASTM D638	60.0	4.0	3.0
Flexural Strength @yield	psi	ASTM D790	24,000	30,000 @break	30,000 @break
Flexural Modulus	psi	ASTM D790	510,000	1,000,000	1,300,000
Izod Impact Strength					
Un-Notched	ft-lbs/in	ASTM D4812	25.0	9.0	8.0
Notched @73°F	ft-lbs/in	ASTM D256	1.0	1.2	1.6
Hardness	M Scale	ASTM D785	M109	M114	M114
<b>Thermal</b>					
Heat Deflection Temperature					
@66 psi	°F	ASTM D648	410	410	414
@264 psi	°F	ASTM D648	394	410	410
Coefficient of Thermal Expansion	in/in/°F	ASTM E831	3.1x10 <sup>-5</sup>	1.4x10 <sup>-5</sup>	1.1x10 <sup>-5</sup>
Flammability Rating	—	UL94	@.118" 5VA @.0295" V-0	@.016" V-0	@.010" V-0
Limiting Oxygen Index	%	ASTM D2863	47.0	50.0	50.0
<b>Electrical</b>					
Dielectric Strength .063" in oil	V/mil	ASTM D149	710	670	770
Dielectric Constant @1kHz	—	ASTM D150	3.15	3.50	3.70
Dissipation Factor @1kHz	—	ASTM D150	0.0012	0.0015	0.0015
Volume Resistivity	ohm-cm	ASTM D257	1.0x10 <sup>17</sup>	7.0x10 <sup>16</sup>	3.0x10 <sup>16</sup>
<b>Other</b>					
Specific Gravity	—	ASTM D792	1.27	1.42	1.51
Water Absorption @24 hours	%	ASTM D570	0.25	.019	0.16