

# Thermalux®

(polysulfone)

Made from UDEL® polysulfone resin, these stock shapes remain stable, resisting creep and deformation under continuous load and elevated temperatures. They have high tensile strength and, as temperatures increase, flexural modulus remains high. Thermalux products will withstand exposure to soap, detergent solutions and some hydrocarbon oils, even at elevated temperatures under moderate stress levels.

The following physical property information is based on typical values of the base polysulfone resin (PSU).



	Units	ASTM Test	Result
<b>Mechanical</b>			
Tensile Strength @yield	psi	D638	10,200
Tensile Strength @break	psi	D638	—
Tensile Modulus	psi	D638	360,000
Tensile Elongation @yield	%	D638	5.0-6.0
Tensile Elongation @break	%	D638	50.0-100.0
Flexural Strength @yield	psi	D790	15,400
Flexural Modulus	psi	D790	390,000
Compressive Strength @yield	psi	D695	13,900
Compressive Modulus	psi	D695	—
Izod Impact Strength			
Un-Notched	ft•lbs/in	D256	No Break
Notched @73°F	ft•lbs/in	D256	1.3
Hardness (R, M, L or D)	—	D785	R120
		D2240	M69
<b>Thermal</b>			
Heat Deflection Temperature			
@66 psi	°F	D648	358
@264 psi	°F	D648	345
Coefficient of Thermal Expansion	in/in/°F	D696	3.1x10 <sup>-5</sup>
Flammability Rating-UL94 @.176"	—	—	V-0
Thermal Conductivity	(BTU•in)/(hr•ft <sup>2</sup> •°F)	C177	1.80
Limiting Oxygen Index	%	D2863	30.0
<b>Electrical</b>			
Dielectric Strength	V/mil	D149	425
Dielectric Constant @1kHz	—	D150	3.06
Dissipation Factor @1kHz	—	D150	0.0010
Volume Resistivity	ohm•cm	D257	5.0x10 <sup>16</sup>
<b>Optical</b>			
Haze	%	D1746	5.0
Transparency	%	D1746	75
<b>Other</b>			
Specific Gravity	—	D792	1.24
Water Absorption @24 hours	%	D570	0.30

**Applications Include:**

- Float switches
- Membrane cartridge filter system
- Solenoid valve body
- Dairy connectors

**Advantages of Thermalux:**

- Dimensionally stable
- Easily machined
- FDA compliant
- Transparent grades available
- Excellent mechanical and electrical properties
- Steam resistant
- Low outgassing levels

**Manufacturing Capabilities:**

- Rod:** 3/16" to 6" diameter
- Sheet:** .035" to 3/16" thick
- Slab:** 1/4" to 4" thick
- Film:** .001" to .029" thick

**Colors/Grades:**

Light Amber (custom colors available)

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



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