

# POLYIMIDE (PI) - Unfilled

## KEY FEATURES

- Superior High Temperature Characteristics
- Excellent Long-Term Thermal Stability
- Outstanding Bearing and Wear Properties
- Excellent Creep Resistance
- High Strength and Stiffness Properties
- High Purity Characteristics
- Good Chemical Resistance

## DESCRIPTION

Polyimide (PI) provides a superior combination of high temperature, bearing and wear properties that make it an ideal choice for the most demanding applications. Unfilled PI is very pure and exhibits low outgassing. It is also characterized by its long term thermal stability, outstanding wear resistance, high creep resistance, and strength up to its continuous use temperature of 536° F.

## TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Physical	Chemical Designation			PI	
	Filler				
	Density		g/cm <sup>3</sup>	1.38	D792
Mechanical	Tensile Modulus	@ 73 °F	PSI	681,500	D638
	Tensile Strength @ Yld	@ 73 °F	PSI	17,110	D638
	Tensile Strength @ Brk	@ 73 °F	PSI		
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%		
	Elongation @ Brk	@ 73 °F	%	4.4	D638
	Flexural Modulus	@ 73 °F	PSI	522,000	D790
	Flexural Strength	@ 73 °F	PSI	25,700	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI		
	Izod (charpy) Impact Strength	@ 73 °F	ft-lbs/in	41.8	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale		
	Coefficient of Friction	Static			
	Coefficient of Friction	Dynamic, 40PSI			
	Wear (K) Factor		in_-min/ft-lbs-hr		
Limiting PV		psi-fpm			

### TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
<b>Thermal</b>	Vicat Softening Point		°F		
	Melting Temperature		°F		
	Heat Deflection Temperature	@ 66	°F		
	Heat Deflection Temperature	@ 264	°F	>600	D648
	Service Temperature	Intermittent	°F	626	
	Service Temperature	Long Term	°F	536	
	Thermal Expansion (CLTE)		in/in/°F	3.0*10 <sup>-5</sup>	D696
	Specific Heat		BTU/lb-°F	0.221	
	Thermal Conductivity		BTU-in/hr-ft <sup>2</sup> -°F	1.53	
<b>Electrical</b>	Surface Resistivity		ohms/square	5.0*10 <sup>16</sup>	D257
	Volume Resistivity		ohm-cm	8.0*10 <sup>15</sup>	D257
	Dielectric Strength		V/mil	544	D149
	Dielectric Constant	@ 60 Hz, 73 °F			D150
	Dissipation Factor	@ 60 Hz, 73 °F		0.003	D150
<b>Other</b>	Moisture Absorption	@ 24 hrs, 73 °F	%	0.24	D570
	Moisture Absorption	@ Saturation, 73 °F	%		
	Flammability	UL 94		V-0	
	Food Grade			N	
	Relative Cost			\$\$\$ \$\$\$\$	

\*The data stated above are typical values intended for reference and comparison purposes only.

\*The data should not be used as a basis for design specifications or quality control.

\*The information is provided as a guide to the best of our knowledge and given without obligation or liability.

\*Testing under individual application circumstances is recommended.