EAGLE PERFORMANCE PLASTICS
Custom Machined Plastic Components

POLYIMIDE (PI) - Graphite-filled

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. Graphite-filled PI contains 15% graphite and is available for applications requiring improved wear resistance and lower coefficient of friction.

TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Physical	Chemical Designation			PAI	
	Filler			Graphite-filled	
	Density		g/cm^3	1.46	D792
Mechanical	Tensile Modulus	@ 73 °F	PSI	638,000	D638
	Tensile Strength @ Yld	@ 73 °F	PSI	14,645	D638
	Tensile Strength @ Brk	@ 73 °F	PSI		
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%		
	Elongation @ Brk	@ 73 °F	%	3.7	D638
	Flexural Modulus	@ 73 °F	PSI	587,000	D790
	Flexural Strength	@ 73 °F	PSI	20,700	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI		
	Izod (charpy) Impact Strength	@ 73 °F	ft-lbs/in	17.5	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale		
	Coefficient of Friction	Static			
	Wear (K) Factor		in^3-min/ft-lbs-hr		
	Limiting PV		psi-fpm		

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TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Thermal	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	$2.3*10^{-5}$	D696
	Specific Heat		BTU/lb-°F		
	Thermal Conductivity		BTU-in/hr-ft^{2}-°F		
Electrical	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm		
	Dielectric Strength		V/mil		
	Dielectric Constant	@ 60 Hz, 73 °F			
	Dissipation Factor	@ 60 Hz, 73 °F			
Other	Moisture Absorption	@ 24 hrs, 73 °F	%	0.44	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.