



THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

PEEK Series

Semi-Crystalline High Performance Plastic

PEEK (Polyether ether ketone) is a high-performance thermoplastic. It is not part of the PI family. It has similar heat and hostile environment resistance as the PI family at a similar cost premium. PEEK is frequently used in injection molding thanks to a blend of strength, resistance, and workability. It is exceptionally resistant to high temperatures, chemicals, fatigue, and creep. PEEK's strength-to-weight profile rivals metals like aluminum, and it will not degrade in chemically or physically harsh environments as metals do. It also has unique properties like total bio-compatibility, UV resistance, pure radiolucency, gamma-ray resistance, and low/no toxicity in all forms.

The Gund Company custom fabricates insulation materials to the exact specifications and drawings specified by our customers. We offer our customers the proper product for their specific application. A variety of dimensions and diameter sizes are available. Product colors vary according to material type.

PROPERTIES	ISO/IEC*		TYPICAL VALUES		ASTM*		TYPICAL VALUES		
	Test Method	Units	Unfilled	30% Glass Filled	Test Method	Units	Unfilled	30% Glass Filled	
PHYSICAL	Density	ISO 1183-1	g/cm ³	1.31	1.51		lb/in ³		
	Specific Gravity					ASTM D792		1.31	1.51
	Water Absorption: 24 hrs. in water @ 73°F	ISO 62	%	0.0600	0.0500	ASTM D 570	%	0.10	0.10
	Water Absorption: Saturation in water @ 73°F		%	0.4500	0.3500	ASTM D 570	%	0.5	0.3000
	Wear Rate	ISO 7148-2	µm/km	28.00	7.00	QTM 55010	ln ² .min/ft.lbs.hr*10 ⁻¹⁰		375
	Dynamic Coefficient of Friction (-)	ISO 7148-2		0.3 - 0.5	0.3 - 0.45	QTM 55007			0.32
	Limiting PV at 100 FPM		MPa.m/s			QTM 55007	ft.lbs/in ² .min		8,500
	Limiting PV at 0.1 / 1 (m/s)		MPa.m/s	0.33 / 0.21					
THERMAL	Melting Temperature (DSC, 10°C(50°F)/min)	ISO 11357-1/-3	°C	340	340	ASTM D 3418	°F	644	644
	Glass Transition Temperature (DMA- Tanδ)		°C				°F		
	Thermal Conductivity at 23°C (73°F)		W/m-K	0.25	0.43		BTU-in/ft ² .hr.°F	1.75	2.98
	CLTE (-40 to 150°C) (-40 to 300°F)					ASTM E 831 (TMA)	µin/in-°F	26	12
	CLTE (23 to 100°C) (73°F to 210°F)		µm/m-°K	50.00	30.00				
	CLTE (23 to 150°C) (73°F to 300°F)		µm/m-°K	55.00	30.00				
	CLTE (>150°C) (>300°F)		µm/m-°K	130.00	64.00				
	Heat Deflection Temperature (264 PSI)	ISO 75-1/-2	°C	160.00	230.00	ASTM D 648	°F	320.00	450.00
	Continuous Service Temperature in Air 20 hrs.		°C	250.00	250.00	UL 94	°F	480	480.00
	Min. Service Temperature		°C	-50	-20		°F		
Flammability: UL94 (3 mm (1/8 in.))			V-0	V-0			V-0	V-0	
Flammability: Oxygen Index	ISO 4589-1/-2	%	35	40					
MECHANICAL	Ultimate Tensile Strength	ISO 527-1/-2	MPa	115	80	ASTM D 638	PSI	16,000	14,000
	Tensile Strain at Yield	ISO 527-1/-2	%	5.0	4.0	ASTM D 638	%	5	
	Tensile Strain at Break	ISO 527-1/-2	%	17.0	4.5	ASTM D 638	%	40	2
	Tensile Modulus of Elasticity	ISO 527-1/-2	GPa	4,300	7,000	ASTM D 638	KSI	630	1,000
	Shear Strength			55.0	97.0	ASTM D 732	PSI	8,000	14,000
	Compressive Stress: 1 / 2 / 5 % nominal strain	ISO 604	MPa	38 / 75 / 140	54 / 103 / 155				
	Compressive Strength					ASTM D 695	PSI	20,000	22,000
	Charpy Impact Strength - Unnotched	ISO 179-1/1eU	kJ/m ²	NB	25.0				
	Charpy Impact Strength - Notched	ISO 179-1/1eA	kJ/m ²	3.50	3.00				
	IZOD Impact Notched	ISO 180	kJ/m ²			ASTM D 256	ft-lb/in	0.60	0.80
	Flexural Strength	ISO 178	MPa	170	155	ASTM D 790	PSI	25,000	23,000
	Flexural Modulus	ISO 178	GPa			ASTM D 790	KSI	600	1,000
	Rockwell M Hardness	ISO 2039-2		105	100	ASTM D 785		100	103
Hardness Shore D	ISO 868				ASTM D 2240		126	126	
ELECTRICAL	Dielectric Strength	IEC 60243-1	kV/mm	24	24	ASTM D 149	V/mil	480	500
	Volume Resistivity	IEC 62631-3-1	Ohm-cm	10 ¹³	10 ¹³	ASTM D 257	Ohm-cm		
	Surface Resistivity	ANSI/ESD STM 11.11	Ohms/sq	10 ¹²	10 ¹²	ANSI/ESD STM 11.11	Ohms/sq	10 ¹²	10 ¹²
	Dielectric Constant @ 1 MHz	IEC 62631-2-1		3.20	3.60	ASTM D 150		3.3	
	Dissipation Factor @ 1 MHz	IEC 62631-2-1		0.0000	0.0000	ASTM D 150		0	

The data supplied are typical values. They are not to be considered specification values. All of the information, suggestions, and recommendations about these properties and uses of the products herein are based on tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the contemplated application, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty - expressed or implied - including, without limitation, warranties of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.