



THE GUNDCOMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

Polyetherimide (PEI) Series

Polymer Structure Performance

PEI (Polyetherimide) is a thermoplastic and a member of the imide family (containing the O=C-N-C=O group). It is priced lower than PK. Other members of the imide families are PAI (Polyamideimide) and BMI or Poly-BMI (Bismaleimide). PEI is also related to PEEK (Poly ether ether ketone). Ultem and Tempalux are commercial grades. PEI is excellent for applications that require consistent dielectric properties over a wide frequency range, including reusable medical devices, analytical instruments, semiconductors, and electrical insulation. It offers superior flame, heat, and chemical resistance while holding high rigidity, strength, and dimensional stability.

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				ASTM			
	Test Method	Units	Unfilled	Flame Resistant	Test Method	Units	Unfilled	Flame Resistant
PHYSICAL	Density	ISO 1183-1	g/cm ³	1.27	-			
	Specific Gravity				ASTM D792		1.28	1.51
	Water Absorption: 24 hrs. in water at 73°F	ISO 62	%	0.19	-	ASTM D570	%	0.25
	Water Absorption: Saturation in water at 73°F		%	1.30	-	ASTM D570	%	1.25
	Wear Rate	ISO 7148-2	μm/km	1,325	-	QTM 55010	in ³ -min/ft-lbs-hr-10 ⁻¹⁰	2,900
	Coefficient of Friction: Dynamic	ISO 7148-2		0.30 - 0.40	-	QTM 55007		0.42
	Limiting PV at 100 FPM				QTM 55007	ft-lbs/in ² -min	1,875	-
	Limiting PV at 0.1 / 1 (m/s)							
THERMAL	Melting Temperature: DSC, 10°C(50°F)/min	ISO 11357-1/-3	°C	-	-			
	Glass Transition Temperature (DMA- Tanδ)		°C	215	-		°F	410
	Thermal Conductivity at 23°C (73°F)		W/m-K	0.24	-		BTU-in/ft ² -hr-°F	1.23
	CLTE (-40 to 150°C) (-40 to 300°F)				ASTM E831 (TMA)	μin/in-°F	31	11
	CLTE (23 to 100°C) (73 to 210°F)		μm/m-°K	50	-			
	CLTE (23 to 150°C) (73 to 300°F)		μm/m-°K	50	-			
	CLTE (>150°C) (>300°F)		μm/m-°K	60	-			
	Heat Deflection Temperature (264 PSI)	ISO 75-1/-2	°C	195	-	ASTM D648	°F	400
	Continuous Service Temperature in Air: 20 hrs.		°C	170	-		°F	340
	Min. Service Temperature		°C	-50	-			
MECHANICAL	Flammability: UL94 (3 mm (1/8 in.))			V-0	V-0			V-0
	Flammability: Oxygen Index	ISO 4589-1/-2	%	47	-			
	Ultimate Tensile Strength	ISO 527-1/-2	MPa	129	-	ASTM D638	PSI	17,000
	Tensile Strain at Yield	ISO 527-1/-2	%	7.00	-	ASTM D638	%	6.90
	Tensile Strain at Break	ISO 527-1/-2	%	13.00	-	ASTM D638	%	32
	Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	3,500	-	ASTM D638	KSI	500
	Shear Strength			97.00	97	ASTM D732	PSI	14,000
	Compressive Stress: 1 / 2 / 5 % nominal strain	ISO 604	MPa	31 / 61 / 137	-			
	Compressive Strength				ASTM D695	PSI	22,000	32,000
	Charpy Impact Strength: Unnotched	ISO 179-1/1eU	kJ/m ²	NB	-			
	Charpy Impact Strength: Notched	ISO 179-1/1eA	kJ/m ²	3.50	-			
	IZOD Impact Strength: Notched				ASTM D256	ft-lb/in	0.50	1.00
	Flexural Strength	ISO 178	MPa	167	-	ASTM D790	PSI	20,000
	Flexural Modulus	ISO 178	MPa	-	-	ASTM D790	KSI	500
	Rockwell Hardness: M Scale	ISO 2039-2	MPa	115	-	ASTM D785		112
	Rockwell Hardness: R Scale		GPa	-	-	ASTM D2240		125
ELECTRICAL	Dielectric Strength	IEC 60243-1	kV/mm	27	-	ASTM D149	V/mil	830
	Volume Resistivity	IEC 62631-3-1	Ohm-cm	10 ¹³	-	ASTM D257	Ohm-cm	-
	Surface Resistivity				ANSI/ESDSTM 11.11	Ohms/sq	10 ¹²	10 ¹²
	Dielectric Constant at 1 MHz	IEC 62631-2-1		3.00	-	ASTM D150		3.15
	Dissipation Factor at 1 MHz	IEC 62631-2-1		0	-	ASTM D150		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.