

PTFE/PEK/PEEK/Arlon® 3000 XT Comparison Table



Property	ASTM Standard	Units	PTFE (Unfilled)	PEK	PEEK	Arlon® 3000 XT
Color	---	---	White	Natural	Tan	Black
Specific gravity	D792	---	2.15	1.32	1.30	1.29
Hardness, Shore D	D2240	Points	55	90	87	88
Izod impact, notched	D256	ft-lbf/inch	3.5	1.1	1.38	1.64
Izod impact, unnotched	D4812	ft-lbf/inch	---	---	No break	37.8
Water absorption @ 24-hr, change in weight	D570	%	<0.01	---	0.07	0.09
Coefficient of friction dynamic, PV=5,000	D3702	psi-ft/min	0.10	0.24	0.56	0.60
Wear factor, PV=5,000	D3702	psi-ft/min x 10 ⁻¹⁰ in ³ min/ (ft-lb-hr)	---	---	451.4	110.6
Heat deflection temperature @ 264 psi (1.83 MPa)*	D648	°F/°C	---	329/165	338/170	>572/>300
Melting point (Tm), by DSC (differential scanning calorimetry)	D3418	°F/°C	---	---	649/343	665/352
Tensile yield strength @ 500°F/260°C	D638, Type 1	psi/MPa	---	3,600/25	2,600/18	3,820/28
Tensile strength @ break, @ 500°F/260°C	D638, Type 1	psi/MPa	---	6,400/44	6,100/42	5,380/38
Tensile elongation @ break, @ 500°F/260°C	D638	%	---	---	>40	>25
Tensile modulus @ 500°F/260°C	D638	psi/MPa	---	---	38,700/267	88,100/607
Flexural strength @ 5% strain, @ 500°F/260°C	D790	psi/MPa	---	4,000/27.6	2,300/16	3,740/26
Flexural modulus @ 500°F/260°C	D790	psi/MPa	---	---	50,300/347	90,200/622

*No deflection up to the maximum test temperature.

**Tested @ 527°F (275°C).

Note: Some of the PTFE, PEK, and PEEK information presented herein was acquired by Greene, Tweed from the producers of the products, materials, or original information providers. However, GT assumes no responsibility or liability for the accuracy of any such information contained on this table. The content of third-party sites is not within our control, and we cannot and will not take responsibility for the information or content provided.

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Property	ASTM Standard	Units	PTFE (Unfilled)	PEK	PEEK	Arlon® 3000 XT
Compressive strength @ 500°F	D695	psi/MPa	---	---	2,590/18	5,500/38
Compressive modulus @ 500°F	D695	psi/MPa	---	---	16,900/ 117	132,000/ 910
Shear strength (test performed on flex bars) @ 500°F	D732	psi/MPa	135	3,800/26.2	3,300/23	6,880/47
Coefficient of thermal expansion (axial)	E831	µm/m°C	---	---	46.8 (T<Tg)/ 135 (T>Tg)	55.4 (T<Tg)/ 120 (T<Tg)
Volume resistivity @ RT	D257	Ohm-cm	>10 ¹⁸	>10 ¹⁶ **	>10 ¹⁶	>10 ¹³ **
Dielectric strength	D149	V/mil	400-500	391	480	541
Tg value	---	°F/°C	---	---	293/145	338/170

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**Tested @527°F (275°C).

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