



# TYPICAL PROPERTIES

Reference Document No. GTS-3300S

Compound No./Material Name: <b>ARLON® 3000 XT</b>	Material Description: <b>Enhanced PEEK</b>	Manufacturing Method: <b>Injection Molded</b>
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DESCRIPTION (ASTM Standards)	TYPICAL					
	Arlon® 3000 XT			PEEK		
<b>Physical &amp; Mechanical Properties</b>						
Color	Black			Tan		
Specific Gravity (D792)	1.29			1.30		
Hardness, Shore D, Points (D2240)	88			87		
Izod Impact, Notched, ft-lbf/in [J/m] (D256)	1.64 [87.6]			1.38 [73.7]		
Izod Impact, Unnotched, ft-lbf/in [J/m] (D4812)	37.8 [2,018.5]			no break		
Water Absorption @ 24 Hrs., Change in weight, % (D570)	0.09			0.07		
Coefficient of Friction Dynamic, PV=5000 psi-ft/min (D3702)	0.60			0.56		
Wear Factor (PV=5000 psi-ft/min), x10 <sup>-10</sup> in <sup>3</sup> min/(ft-lb-hr) (D3702)	110.6			451.4		
Heat Deflection Temperature @ 264 psi (1.83 MPa), °F [°C] (D648)	>572 [>300]			338 [170]		
DSC, Melting Point (Tm), °F [°C] (D3418)	665 [352]			649 [343]		
<b>Temperature Properties</b>	<b>75°F</b>	<b>392°F</b>	<b>500°F</b>	<b>75°F</b>	<b>392°F</b>	<b>500°F</b>
	<b>(23°C)</b>	<b>(200°C)</b>	<b>(260°C)</b>	<b>(23°C)</b>	<b>(200°C)</b>	<b>(260°C)</b>
Tensile Yield Strength, psi [MPa] (D638-Type1)	17,100 [117.90]	4,820 [33.23]	3,820 [28.27]	14,900 [102.73]	4,200 [28.96]	2,600 [17.93]
Tensile Strength at Break, psi [MPa] (D638-Type1)	16,900 [116.50]	7,620 [52.54]	5,380 [37.09]	14,100 [97.22]	6,300 [43.44]	6,100 [42.06]
Elongation at Break, % (D638-Type1)	8–15	>25	>25	25–35	>40	>40
Tensile Modulus, psi [MPa] (D638-Type1)	559,000 [3,854.17]	175,160 [1,207.69]	88,100 [607.43]	595,000 [4,102.4]	57,300 [395.07]	38,700 [266.83]
Flexural Strength at 5% Strain, psi [MPa] (D790)	23,300 [160.65]	5,880 [40.54]	3,740 [25.79]	25,700 [177.20]	3,400 [23.44]	2,300 [15.86]
Flexural Modulus, psi [MPa] (D790)	628,000 [4,329.91]	158,000 [1,089.37]	90,200 [621.91]	654,000 [4,509.17]	76,000 [524.00]	50,300 [346.81]
Compressive Strength, psi [MPa] (D695)	22,000 [151.68]	10,300 [71.02]	5,500 [37.92]	19,900 [137.21]	4,080 [28.13]	2,590 [17.86]
Compressive Modulus, psi [MPa] (D695)	525,000 [3,619.75]	226,000 [1,558.22]	132,000 [910.11]	592,200 [4,083.08]	75,200 [518.49]	16,900 [116.52]
Shear Strength (test performed on flex bars), psi [MPa] (D732)	15,300 [105.49]	9,050 [62.40]	6,880 [47.44]	12,700 [87.56]	4,100 [28.27]	3,300 [22.75]

typical properties / arlon® 3000 xt

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DESCRIPTION (ASTM Standards)	TYPICAL					
	Arlon® 3000 XT			PEEK		
<b>Thermal Properties</b>						
Coefficient of Thermal Expansion (Axial), $\mu\text{m}/(\text{m}^\circ\text{C})$ (E831)	55.4 (T<T <sub>g</sub> ), 120 (T>T <sub>g</sub> )			46.8 (T<T <sub>g</sub> ), 135 (T>T <sub>g</sub> )		
<b>Electrical Properties</b>	<b>Arlon 3000 XT</b>			<b>PEK</b>		
	<b>257°F</b>	<b>392°F</b>	<b>527°F</b>	<b>257°F</b>	<b>392°F</b>	<b>527°F</b>
	<b>(125°C)</b>	<b>(200°C)</b>	<b>(275°C)</b>	<b>(125°C)</b>	<b>(200°C)</b>	<b>(275°C)</b>
Volume Resistivity at High Temperature**, $\times 10^{15}$ Ohm-cm (D257)	4.85	0.88	0.71	3.82	0.83	0.75
Surface Resistivity at High Temperature**, $\times 10^{14}$ Ohm/square (D257)	8.20	1.30	0.97	5.61	1.22	0.96
Dielectric Strength, v/mil, thickness = 40 mil (D149)	541			391		

**Note**

\*\* Tests performed with flex bars.

Unless otherwise noted, all tests performed on ASTM standard samples.

Arlon 3000 XT is patent pending. Arlon® 3000 XT by Greene, Tweed based on VESTAKEEP®, an Evonik product

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