

Arlon® 1555 Typical Properties

Material Description: PEEK, Carbon-, Graphite-, and PTFE-Filled | Material Method: Injection Molded | Color: Black

Description	ASTM Standard	Units	Typical
Physical & Mechanical Properties			
Specific Gravity	D792	—	1.46
Hardness, Shore D	D2240	—	87
Hardness, Rockwell M	D785	—	98
Tensile Break Strength	D638	psi [MPa]	21,200 [146.2]
Tensile 0.5% Secant Modulus	D638	psi [MPa]	1,650,000 [11,376.3]
Elongation	D638	%	2.2
Flexural Strength	D790	psi [MPa]	33,000 [227.5]
Flexural 0.5% Secant Modulus	D790	psi [MPa]	1,400,000 [9,652.6]
Shear Strength, Axial	D732	psi [MPa]	13,000 [89.6]
Shear Strength, Transverse	D732	psi [MPa]	10,000 [68.9]
Compressive Strength @ Break*	D695	psi [MPa]	24,600 [169.6]
Deformation Under Load	D621	%	0.10
Coefficient of Dynamic Friction, 83.3 psi & 150 ft/min. [0.6 MPa & 45.7 m/min.]	D3702	—	0.43
Wear Factor, 83.3 psi & 150 ft/min. [0.6 MPa & 45.7 m/min.]	D3702	10 ⁻¹⁰ in. ³ -min/(lb-ft-hr) [10 ⁻⁷ cm ³ -min/(kg-m-hr)]	73 [8.6]
Coefficient of Thermal Expansion, Axial (Mold Direction) <300°F [149°C]	E831	µin/in-°F [µm/m-°C]	11 [19.01]
Coefficient of Thermal Expansion, Axial (Mold Direction) >300°F [149°C]	E831	µin/in-°F [µm/m-°C]	55 [99.41]
Coefficient of Thermal Expansion, Transverse <300°F [149°C]	E831	µin/in-°F [µm/m-°C]	26 [47.48]
Coefficient of Thermal Expansion, Transverse >300°F [149°C]	E831	µin/in-°F [µm/m-°C]	75 [134.90]

Mechanical Properties at Temperature				
Temperature	Flexural Strength (D790)	Flexural Strain (D790)	Flexural Modulus (D790)	Shear Strength (D732)
°F [°C]	ksi [MPa]	%	ksi [MPa]	ksi [MPa]
75 [24]	28.0 [193.1]	2.8	1,380.0 [9,514.7]	11.2 [77.2]
150 [66]	27.3 [188.0]	3.1	— [—]	9.9 [68.3]
200 [93]	26.6 [183.4]	3.0	1,250.0 [8,618.4]	8.9 [61.4]
250 [121]	20.4 [140.6]	2.5	1,220.0 [8,411.6]	8.1 [55.8]
300 [149]	18.4 [126.8]	3.4	950.0 [6,550.0]	7.3 [50.3]
350 [177]	— [—]	—	390.0 [2,689.0]	5.5 [37.9]
400 [204]	— [—]	—	330.0 [2,275.3]	4.5 [31.0]
450 [232]	— [—]	—	270.0 [1,861.6]	3.8 [26.2]
500 [260]	— [—]	—	250.0 [1,723.7]	3.4 [23.4]

Temperature	Compressive Strength @ Break, Axial Direction (D695)	Compressive Strength @ Break, Transverse Direction (D695)
°F [°C]	ksi [MPa]	ksi [MPa]
-58 [-50]	27.2 [187.7]	26.5 [182.7]
75 [24]	21.9 [151.4]	20.1 [143.7]
212 [100]	16.0 [110.5]	15.7 [108.5]

Notes:

- Properties of Arlon® 1555 are anisotropic. The published properties, unless otherwise noted, are measured in the axial flow direction of molded test specimens. Strength and stiffness, therefore, are at a maximum while elongation and thermal coefficient of expansion are at a minimum.
- Tested on axially injection molded test bars according to ASTM D695.
- Reference GT Stock/Solid Code: 036.
- Compressive Properties were tested on compressive cylinders that were machined axially and transversely with respect to mold flow direction according to ASTM D695.

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