

Arlon® 1555 Sealing Solutions

Compound No./Material Name:	Manufacturing Method:	Material Description:	Color:
Arlon® 1555	Injection Molded	PEEK, Carbon-, Graphite-, and PTFE-Filled	Black

Description (ASTM Standard)	Typical
Physical & Mechanical Properties	
Specific Gravity (D792)	1.46
Hardness, Shore D (D2240)	87
Hardness, Rockwell M (D785)	98
Tensile Break Strength, psi [MPa] (D638)	21,200 [146.2]
Tensile 0.5% Secant Modulus, psi [MPa] (D638)	1,650,000 [11,376.3]
Elongation, % (D638)	2.2
Flexural Strength, psi [MPa] (D790)	33,000 [227.5]
Flexural 0.5% Secant Modulus, psi [MPa] (D790)	1,400,000 [9,652.6]
Shear Strength, Axial, psi [MPa] (D732)	13,000 [89.6]
Shear Strength, Transverse, psi [MPa] (D732)	10,000 [68.9]
Compressive Strength @ Break*, psi [MPa] (D695)	24,600 [169.6]
Deformation Under Load, % (D621)	0.10
Heat Deflection Temperature @ 264 psi [1.8 MPa], °F [°C] (D648)	>600 [>316]
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.] 10^{-10} in. ³ -min/(lb-ft-hr) [10^{-7} cm ³ -min/(kg-m-hr)] (D3702)	73 [8.6]
Coefficient of Thermal Expansion, Axial (Mold Direction) <300°F [149°C] μin/in-°F [μm/m-°C] (E831)	11 [19.01]
Coefficient of Thermal Expansion, Axial (Mold Direction) >300°F [149°C] μin/in-°F [μm/m-°C] (E831)	55 [99.41]
Coefficient of Thermal Expansion, Transverse <300°F [149°C] μin/in-°F [μm/m-°C] (E831)	26 [47.48]
Coefficient of Thermal Expansion, Transverse >300°F [149°C] μin/in-°F [μm/m-°C] (E831)	75 [134.90]



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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]	26.7 [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]	26.6 [182.7]
75 [24]	21.7 [151.4]	20.1 [143.7]
212 [100]	16.0 [110.5]	15.8 [108.5]

Notes:

1. 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.
2. Tested on axially injection molded test bars according to ASTM D695.
3. Reference GT Stock/Solid Code: 036.
4. Compressive Properties were tested on compressive cylinders that were machined axially and transversely with respect to mold flow direction according to ASTM D695.