

Arlon[®] 1330 Sealing Solutions

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|--|--|--|----------------------|
| Compound No./Material Name: Arlon[®] 1330 | Material Description: PEEK, Lubricated | Manufacturing Method: Injection Molded | Color: Tan |
|--|--|--|----------------------|

| Description (ASTM Standard) | Typical |
|---|----------------------|
| Physical & Mechanical Properties | |
| Specific Gravity (D792) | 1.38 |
| Hardness, Shore D, Points (D2240) | 85 |
| Hardness, Rockwell M, Points (D785) | 96 |
| Tensile Yield Strength, psi [MPa] (D638) | 13,000 [89.6] |
| Tensile Break Strength, psi [MPa] (D638) | 12,600 [86.9] |
| Tensile 0.5% Secant Modulus, psi [MPa] (D638) | 520,000 [3,585.3] |
| Elongation, % (D638) | 20 |
| Flexural Strength, psi [MPa] (D790) | 21,100 [145.5] |
| Flexural 0.5% Secant Modulus, psi [MPa] (D790) | 535,000 [3,688.7] |
| Shear Strength, Axial, psi [MPa] (D732) | 10,400 [71.7] |
| Shear Strength, Transverse, psi [MPa] (D732) | 10,400 [71.7] |
| Compressive Strength @ Break, psi [MPa] (D695) | 15,500 [106.9] |
| Deformation Under Load, % (D621) | 0.14 |
| Heat Deflection Temperature @ 264 psi [1.82 MPa], °F [°C] (D648) | 330 [166] |
| Coefficient of Dynamic Friction, PV=12,600 psi-ft/min (G77) | 0.15 |
| Wear Factor, Modified ASTM G77, 10 ⁻¹⁰ in. ³ -min/(lb-ft-hr) (G77) | 20 |
| Coefficient of Friction, Semi-Sperse SSW2000 Slurry, IC1010 Rodel Pad (CMP Tribology [†]) | 0.594 |
| Mean Square Error (MSE), Vibration Resistance, (CMP Tribology [†]) | 0.056 |
| Wear Factor (Weight Loss/Specific Gravity), mg (CMP Tribology [†]) | 2.860 |
| GTC Wear Factor (Weight Loss/Specific Gravity), mg (WI-SC-02-11.002) | 0.171 |
| Coefficient of Thermal Expansion, < 300°F [149°C] 10 ⁻⁶ in./(in°F) [10 ⁻⁶ cm/(cm°C)] (D696) | 23 [41.4] |
| Coefficient of Thermal Expansion, > 300°F [149°C] 10 ⁻⁶ in./(in°F) [10 ⁻⁶ cm/(cm°C)] (D696) | 82 [147.6] |

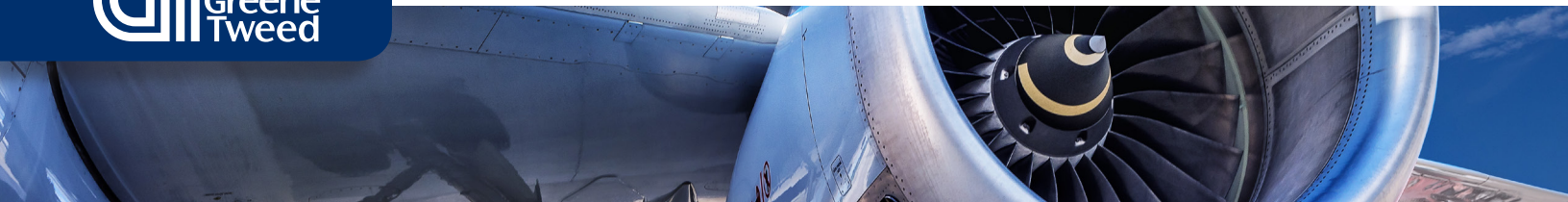
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High-Temperature Properties

| Temperature | Flexural Modulus, ksi [MPa] (D790) | Shear Strength, ksi [MPa] (D732) |
|---------------|------------------------------------|----------------------------------|
| 75°F [24°C] | — [—] | 11.3 [77.9] |
| 150°F [66°C] | 472.0 [3,254.3] | 9.9 [68.3] |
| 200°F [93°C] | 446.8 [3,080.6] | 9.2 [63.4] |
| 250°F [121°C] | 434.0 [2,992.3] | 7.8 [53.8] |
| 300°F [149°C] | 197.1 [1,359.0] | 7.1 [49.0] |
| 350°F [177°C] | 53.2 [366.8] | 4.5 [31.0] |
| 400°F [204°C] | 29.5 [203.4] | 3.4 [23.4] |
| 450°F [232°C] | 22.9 [157.9] | 2.9 [20.0] |
| 500°F [260°C] | — [—] | 2.5 [17.2] |
| 550°F [288°C] | — [—] | 2.1 [14.5] |

ICP - Mass Spectrometry Analysis

| Element | TM/Poly Material, ppb | Leachable TM/SC1, ppb |
|-----------|-----------------------|-----------------------|
| Aluminum | 810 | 1.5 |
| Calcium | 12,000 | 4.2 |
| Chromium | 600 | 0.3 |
| Copper | * | 0.9 |
| Iron | 4,000 | 7.2 |
| Potassium | 790 | * |
| Magnesium | 370 | 0.1 |
| Sodium | 150,000 | 2.1 |
| Nickel | 450 | 0.1 |
| Lead | * | * |
| Tin | * | * |
| Titanium | 370 | * |
| Zinc | 100 | 0.7 |

* Analysis revealed that the element was not found at or above the detection limit for the test.

Notes:

1. Reference GTC Stock/Solid Code: 039.
2. †Tribology Testing, CETR Parameters.

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