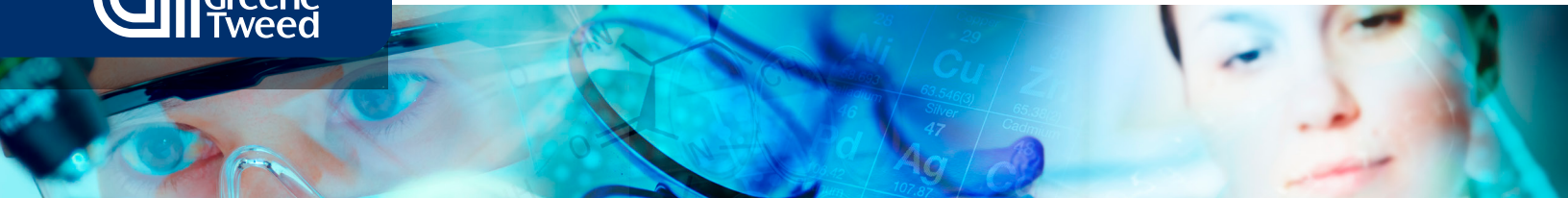


# Arlon® 1330 Sealing Solutions

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

| Description                                                                                                      | Typical           |
|------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Physical &amp; Mechanical Properties (ASTM Standard)</b>                                                      |                   |
| 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, °F [°C] (D648)                                                            | 330 [166]         |
| Coefficient of Dynamic Friction, PV=12,600 psi-ft/min (G77)                                                      | 0.15              |
| Wear Factor, Modified ASTM G77, 0 <sup>-10</sup> in. <sup>3</sup> -min/(lb-ft-hr) (G77)                          | 20                |
| Coefficient of Friction, Semi-Sperse SSW2000 Slurry, IC1010 Rodel Pad (CMP Tribology <sup>†</sup> )              | 0.594             |
| Mean Square Error (MSE), Vibration Resistance, (CMP Tribology <sup>†</sup> )                                     | 0.056             |
| Wear Factor (Weight Loss/Specific Gravity), mg (CMP Tribology <sup>†</sup> )                                     | 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 <sup>-6</sup> in./in.°F [10 <sup>-6</sup> cm/(cm°C)] (D696) | 23 [41.4]         |
| Coefficient of Thermal Expansion, > 300°F (149°C) 10 <sup>-6</sup> in./in.°F [10 <sup>-6</sup> cm/(cm°C)] (D696) | 82 [147.6]        |



|                             |                        |                       |        |
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| High-Temperature Properties      |                                    |                                  |
|----------------------------------|------------------------------------|----------------------------------|
| Temperature                      | Flexural Modulus, psi [MPa] (D790) | Shear Strength, psi [MPa] (D732) |
| 75°F [24°C]                      | — [—]                              | 11,250 [77.6]                    |
| 150°F [66°C]                     | 472,000 [3,254.3]                  | 9,900 [68.3]                     |
| 200°F [93°C]                     | 446,800 [3,080.6]                  | 9,190 [63.4]                     |
| 250°F [121°C]                    | 434,000 [2,992.3]                  | 7,840 [54.1]                     |
| 300°F [149°C]                    | 197,100 [1,359.0]                  | 7,070 [48.7]                     |
| 350°F [177°C]                    | 53,190 [366.7]                     | 4,530 [31.2]                     |
| 400°F [204°C]                    | 29,460 [203.1]                     | 3,380 [23.3]                     |
| 450°F [232°C]                    | 22,870 [157.7]                     | 2,870 [19.8]                     |
| 500°F [260°C]                    | — [—]                              | 2,520 [17.4]                     |
| 550°F [288°C]                    | — [—]                              | 2,080 [14.3]                     |
| 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                              |

Notes: Reference GTC Material Code Numbers. Solid Code: 039; Split Code: 038; AGT Code: P8.

\*Tribology Testing, CETR Parameters.

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