



THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

Rulon™ Grades

Semi-Crystalline High Performance Plastic (PTFE)

PTFE (Polytetrafluoroethylene) is commonly known as Teflon. It is one of the greatest thermoplastics invented in the 20th Century. Its high-temperature resistance (up to 300°C) and corrosion resistance rival and exceed that of the high-performance thermoplastics of the PI family, PEEK, and PES. Its low coefficient of friction and water repellence is unmatched. Mechanical properties, however, are weaker than other high-performance thermoplastics. Reinforcing substrates can improve those deficiencies. PTFE and molded grades (FEP and PFA) are affordable (considering their superior properties). They are used in most electrical and commercial applications where low-friction, long-wear, non-stick, and water resistance are necessary. Teflon, Flourosint, and Rulon are commercial names.

The Gund Company custom fabricates insulation materials to the exact specifications and drawings specified by our customers. We offer our customers the proper product for their specific application. A variety of dimensions and diameter sizes are available. Product colors vary according to material type.

| | | ISO/IEC | | | | | ASTM | | | | | | |
|----------------------|---|----------------|-----------|----------------------|-------------|------------------|--------------------|-------------|----------------------|----------------------|-------------|------------------|--------------------|
| | | TYPICAL VALUES | | | | | TYPICAL VALUES | | | | | | |
| PROPERTIES | | Test Method | Units | Rulon J | Rulon 641 | Rulon AR | Rulon LR | Test Method | Units | Rulon J | Rulon 641 | Rulon AR | Rulon LR |
| PHYSICAL | Density | | g/cm³ | 1.95 | 2.20 | 2.22 | 2.25 | ASTM D792 | lb/in³ | 0.0704 | 0.0795 | 0.0802 | 0.0813 |
| | Water Absorption: 24 hrs. | | % | 0 | 0 | 0 | 0 | ASTM D570 | % | 0 | 0 | 0 | 0 |
| | Water Absorption at Saturation | | % | - | - | 0 | 3 | | % | - | - | 0 | 3 |
| | Deformation at 10.3 MPa (1,500 PSI) | | % | - | 4 | - | - | ASTM D621 | % | - | 4 | - | - |
| THERMAL | CTE, Linear, Parallel to Flow at 37.8°C (100°F) | Length | µm/m·°C | 100 | 103 | - | 99.40 | Length | µin/in·°F | 55.70 | 57.20 | - | 55.20 |
| | CTE, Linear, Parallel to Flow at 149°C (300°F) | Length | µm/m·°C | 120 | 139 | - | 149 | Length | µin/in·°F | 66.50 | 77.20 | - | 83 |
| | CTE, Linear, Transverse to Flow at 37.8°C (100°F) | Diameter | µm/m·°C | 90 | 76.90 | - | 61.90 | Diameter | µin/in·°F | 50 | 42.70 | - | 34.40 |
| | CTE, Linear, Transverse to Flow at 149°C (300°F) | Diameter | µm/m·°C | 105 | 102 | - | 81.50 | Diameter | µin/in·°F | 58.60 | 56.70 | - | 45.30 |
| | Thermal Conductivity | | W/m·K | 0.0346 | 0.375 | 0.331 | 0.331 | ASTM D2214 | BTU-in/hr·ft²·°F | 0.24 | 2.60 | 2.30 | 2.30 |
| | Maximum Service Temperature in Air | | °C | 288 | 288 | 288 | 288 | | °F | 550 | 550 | 550 | 550 |
| | Minimum Service Temperature in Air | | °C | -268 | -240 | -240 | -240 | | °F | -450 | -400 | -400 | -400 |
| MECHANICAL | Hardness: Brinell | | | ≥64 | - | - | - | | | ≥64 | - | - | - |
| | Hardness: Rockwell B | | | ≥25 | - | - | - | | | ≥25 | - | - | - |
| | Hardness: Shore D | | | 60 - 70 | 60 - 70 | 75 | 60 - 70 | ASTM D2240 | | 60 - 70 | 60 - 70 | 75 | 60 - 70 |
| | Tensile Strength | | MPa | 18.80 | 21.40 | 13.80 | 18.60 | ASTM D4894 | PSI | 2,730 | 3,100 | 2,000 | 2,700 |
| | Elongation at Break | | % | 235 | 350 | 175 | 235 | ASTM D4894 | % | 235 | 350 | 175 | 235 |
| | Flexural Yield Strength: Strain 1% | | MPa | 3.40 | 4.20 | - | 3.80 | ASTM D790 | PSI | 493 | 609 | - | 551 |
| | Flexural Modulus | | GPa | 0.36 | 0.41 | - | 0.40 | ASTM D790 | KSI | 52.20 | 59.50 | - | 59.50 |
| | Compressive Yield Strength: Strain 1% | | MPa | 5.50 | 4.60 | 6.89 | 5.20 | ASTM D695 | PSI | 798 | 667 | 1,000 | 754 |
| | Compressive Modulus | | GPa | 0.56 | 0.48 | - | 0.55 | ASTM D695 | KSI | 81.20 | 69.60 | - | 79.80 |
| | Coefficient of Friction: Dynamic | | | | 0.10 - 0.30 | 0.15 - 0.25 | - | | - | | 0.10 - 0.30 | 0.15 - 0.25 | - |
| | Coefficient of Friction: Static | | | | - | 0.15 - 0.25 | - | | - | | - | 0.15 - 0.25 | - |
| | Limiting Pressure Velocity | | MPa·m/sec | 0.263 | 0.35 | 0.35 | 0.35 | | PSI·ft/min | 7,500 | 10,000 | 9,990 | 9,990 |
| IZOD Impact: Notched | | J/cm | - | - | 3.20 | - | | ft·lb/in | - | - | 6 | - | |
| ELECTRICAL | Volume Resistivity | | | - | - | 10 ¹⁵ | ASTM D257 | Ohm·cm | 8.2·10 ¹⁸ | - | - | 10 ¹⁵ | |
| | Surface Resistance | | Ohm | 6.3·10 ¹⁸ | - | - | 2·10 ¹³ | ASTM D257 | Ohm | 6.3·10 ¹⁸ | - | - | 2·10 ¹³ |
| | Dielectric Constant at 1 MHz | | | 2.40 | - | - | 2.50 | ASTM D150 | | 2.40 | - | - | 2.50 |
| | Dielectric Strength | | kV/mm | 7.87 | - | - | 35.40 | ASTM D149 | kV/in | 200 | - | - | 900 |
| | Dissipation Factor at 1 MHz | | | 0.0015 | - | - | 0.001-0.004 | ASTM D149 | | 0.0015 | - | - | 0.001-0.004 |

RULON J

- The lowest coefficient of friction of all Rulons
- Good wear and abrasion resistance (even against aluminum and soft mating surfaces)

APPLICATIONS

- Used in dry or vacuum type environments
- Agriculture, Appliance, Automotive, Industrial, and Transportation

RULON 641

- Designed to run dry without external lubrication
- Compatible with 303 / 316 stainless steel mating surfaces
- FDA compliant

APPLICATIONS

- Used in steam, wet, dry, vacuum, or FDA type environments
- Appliances, Automotive, Dairy/Food/Beverage, Industrial, Medical, and Transportation

RULON AR

- More flexible than Rulon® LR
- Reliability in continuous non-lubricated service
- Universal chemical inertness
- Working Temperature Range between -240° to +288°C (-400° to +550°F)

APPLICATIONS

- Suitable for seals and bonded coating of slide surfaces

RULON LR

- High wear resistance and low friction
- Good electrical properties and chemical inertness
- Can also be bonded to nearly any surface to provide wear resistance and reduce friction

APPLICATIONS

- Used in steam, wet, dry, and vacuum environments
- Agriculture, Appliance, Automotive, Industrial, and Transportation

The data supplied are typical values. They are not to be considered specification values. All of the information, suggestions, and recommendations about these properties and uses of the products herein are based on tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the contemplated application, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty - expressed or implied - including, without limitation, warranties of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.