



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.

PROPERTIES	ISO/IEC						ASTM						
	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/cm ³	1.95	2.20	2.22	2.25	ASTM D792	lb/in ³	0.07040	0.07950	0.08020	0.08130	
	Water Absorption: 24 hrs.	%	0.0	0.0	0.0	0.0	ASTM D570	%	0.0	0.0	0.0	0.0	
	Water Absorption at Saturation	%	-	-	0.0	3.0		%	-	-	0.0	3.0	
	Deformation at 10.3 MPa (1,500 PSI)	%	-	4.0	-	-	ASTM D621	%	-	4.0	-	-	
THERMAL	CTE, Linear, Parallel to Flow at 37.8°C (100°F)	Length	µm/m°C	100	103	-	99.4	Length	µin/in°F	55.7	57.2	-	55.2
	CTE, Linear, Parallel to Flow at 149°C (300°F)	Length	µm/m°C	120	139	-	149.0	Length	µin/in°F	66.5	77.2	-	83.0
	CTE, Linear, Transverse to Flow at 37.8°C (100°F)	Diameter	µm/m°C	90	76.9	-	61.9	Diameter	µin/in°F	50	42.7	-	34.4
	CTE, Linear, Transverse to Flow at 149°C (300°F)	Diameter	µm/m°C	105	102	-	81.5	Diameter	µin/in°F	58.6	56.7	-	45.3
	Thermal Conductivity		W/m-K	0.0346	0.375	0.331	0.331	ASTM D2214	BTU-in/hr-ft ² -°F	0.240	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	75.0	60 - 70	ASTM D2240		60 - 70	60 - 70	75	60 - 70	
	Tensile Strength	MPa	18.8	21.4	13.8	18.6	ASTM D4894	PSI	2,730	3,100	2,000	2,700	
	Elongation at Break	%	235	350	175.0	235.0	ASTM D4894	%	235	350	175	235	
	Flexural Yield Strength: Strain 1%	MPa	3.40	4.2	-	3.8	ASTM D790	PSI	493	609	-	551	
	Flexural Modulus	GPa	0.360	0.41	-	0.4	ASTM D790	KSI	52.2	59.5	-	59.5	
	Compressive Yield Strength: Strain 1%	MPa	5.500	4.6	6.89	5.2	ASTM D695	PSI	798	667	1,000	754	
	Compressive Modulus	GPa	0.560	0.48	-	0.55	ASTM D695	KSI	81.2	69.60	-	79.8	
	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		-	3.2	-		ft-lb/in	-	-	6	-		
ELECTRICAL	Volume Resistivity			-	-	1.0-10 ¹⁵	ASTM D257	Ohm-cm	8.2-10 ¹⁸	-	-	1.0-10 ¹⁵	
	Surface Resistance	Ohm	6.3-10 ¹⁸	-	-	2.0-10 ¹³	ASTM D257	Ohm	6.3-10 ¹⁸	-	-	2.0-10 ¹³	
	Dielectric Constant at 1 MHz		2.4	-	-	2.5	ASTM D150		2.4	-	-	2.5	
	Dielectric Strength	kV/mm	7.87	-	-	35.4	ASTM D149	kV/in	200	-	-	900	
	Dissipation Factor at 1 MHz		0.0015	-	-	0.0010-0.0040	ASTM D149		0.0015	-	-	0.0010-0.0040	

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.