

# AMILON™ Custom PTFE Products



Technetics PTFE & Polymer Solutions is the manufacturer of AMILON™ custom products, a family of PTFE based materials that are a smart alternative to RULON®. AMILON™ specialty materials can incorporate a wide range of fillers including glass, graphite, moly or bronze and are easily identified by their distinct colors including the white FDA approved AMILON™ 3.

Our engineering and product management team will assist you in selecting materials that possess the properties and characteristics you need to meet specific applications. AMILON™ products are useful where improved thermal conductivity, coefficient of friction, compressive strength, wear rate, creep or cold flow are required.

These materials are used in applications at temperature extremes from -400°F to 500°F and offer excellent abrasion and corrosion resistance.

Material is available in molded rods and cylinders as well as skived or molded sheets.

#### AVAILABLE SIZES

- Molded sheets up to 48" x 48", up to 8" thick
- Skived sheets up to 62" wide 0.001" to 0.375" thick
- Rod and Cylinders up to 60" O.D.

AMILON™	Color	Alternative to	Ideal for/because	Products	Applications
AMILON™ 3	White	RULON® 641	FDA compliant for food processing	Piston Rings, Stamped & Formed Seals, Machined Parts	Pumps, Compressors, Insulators
AMILON™ 10	Black	RULON® W2	Wet environments	Piston Rings, Stamped & Formed Seals, Machined Parts	Pumps, Mixers, Compressors
AMILON™ 22	Black	RULON® 123	Static dissipative & excellent thermal properties	Piston Rings, Stamped & Formed Seals, Machined Parts	Pumps, Compressors, Liners
AMILON™ 44	Blue	RULON® 142	Machine guide ways	Piston Rings, Stamped Parts, Seal Rings	Lathes, Compressors, Linear Slides
AMILON™ 62	Maroon	RULON® AR	High wear resistance and low friction properties	Piston Rings, Stamped & Formed Seals, Machined Parts	Pumps, Compressors, Insulators
AMILON™ 65	Dark Maroon	RULON® LR	Abrasive and creep resistance properties	Piston Rings, Stamped & Formed Seals, Machined Parts	Pumps, Compressors, Insulators
AMILON™ 77	Green	RULON® F	Low coefficient of friction	Piston Rings, Stamped & Formed Seals, Machined Parts	Compressors, Automotive, Insulators
AMILON™ 92	Gold	RULON® J	Good wear and abrasion resistance	Piston Rings, Stamped & Formed Seals	Air Compressors, Automotive, Insulators

# AMILON™ 3



## AMILON™ 3

AMILON™ 3 has been developed for use in food and drug applications and is FDA compliant. It has been designed to run dry without any additional lubrication. AMILON™ 3 is used in applications ranging in temperature from -400°F to +500°F. Material is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: PUMPS, COMPRESSORS, INSULATORS**

**COLOR: WHITE**

**THE ALTERNATIVE TO RULON® 641**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	2.29
Hardness (initial)	Shore D	ASTM D2240	67
Hardness (15 second)	Shore D	ASTM D2240	62
Tensile Strength	psi	ASTM D4745	3100
Elongation	%	ASTM D4745	235
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	2.9
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	5.4 x 10 <sup>-5</sup> 6.1 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft <sup>2</sup> F)	W / mK	ASTM E1530	.32
Water Absorption	%	ASTM D570	0

# AMILON™ 10



## AMILON™ 10

AMILON™ 10 has low friction, excellent wear characteristics and good thermal dissipation. It is excellent for use in fresh water applications. Its properties are enhanced when wet. It is compatible with most metal substrates and soft mating surfaces. AMILON™ 10 is used in applications ranging in temperature from -400°F to +500°F. Material is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: PUMPS, MIXERS, COMPRESSORS**  
**COLOR: BLACK**  
**THE ALTERNATIVE TO RULON® W2**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	2.10
Hardness (initial)	Shore D	ASTM D2240	66
Hardness (15 second)	Shore D	ASTM D2240	61
Tensile Strength	psi	ASTM D4745	2750
Elongation	%	ASTM D4745	200
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	2.7
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	4.6 x 10 <sup>-5</sup> 5.6 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.46
Water Absorption	%	ASTM D570	0

# AMILON™ 22



## AMILON™ 22

AMILON™ 22 is the recommended material for use in wet or submerged applications. It is FDA compliant. This material is also great in applications where the mating surface is soft or non-ferrous. AMILON™ 22 is used in applications ranging in temperature from -400°F to +500°F. AMILON™ 22 is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: PUMPS, COMPRESSORS, LINERS**

**COLOR: BLACK**

**THE ALTERNATIVE TO RULON® 123**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	2.14
Hardness (initial)	Shore D	ASTM D2240	66
Hardness (15 second)	Shore D	ASTM D2240	61
Tensile Strength	psi	ASTM D4745	3740
Elongation	%	ASTM D4745	250
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	3
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	6.1 x 10 <sup>-5</sup> 6.8 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.39
Water Absorption	%	ASTM D570	0

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# AMILON™ 44



## AMILON™ 44

AMILON™ 44 is an excellent choice of material for linear bearing applications such as slideways in heavy equipment and machine tools. It performs exceptionally well in applications under extremely heavy loads. AMILON™ 44 is used in applications ranging in temperature from -400°F to +500°F. AMILON™ 44 is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: LATHES, COMPRESSORS, LINEAR SLIDES**  
**COLOR: BLUE**  
**THE ALTERNATIVE TO RULON® 142**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	3.08
Hardness (initial)	Shore D	ASTM D2240	70
Hardness (15 second)	Shore D	ASTM D2240	65
Tensile Strength	psi	ASTM D4745	3210
Elongation	%	ASTM D4745	175
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	2.6
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	5.1 x 10 <sup>-5</sup> 5.9 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.44
Water Absorption	%	ASTM D570	0

# AMILON™ 62



## AMILON™ 62

AMILON™ 62 is utilized in seals, piston cups, and some bearing applications. This material has high wear resistance, low friction, and good chemical and electrical insulating properties. AMILON™ 62 also offers a great combination of flexibility and load carrying properties. Fillers are ceramic in nature and mating surfaces should be RC 35 or harder. This material is used in applications at temperature extremes from -400°F to +500°F. AMILON™ 62 is available in molded rods and cylinders as well as skived or molded sheets.

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### APPLICATIONS: PUMPS, COMPRESSORS, INSULATORS

### COLOR: LIGHT MAROON

### THE ALTERNATIVE TO RULON® AR

Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	2.27
Hardness (initial)	Shore D	ASTM D2240	62
Hardness (15 second)	Shore D	ASTM D2240	57
Tensile Strength	psi	ASTM D4745	2550
Elongation	%	ASTM D4745	225
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	3
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	4.9 x 10 <sup>-5</sup> 5.7 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.3
Water Absorption	%	ASTM D570	0

# AMILON™ 65



## AMILON™ 65

AMILON™ 65 offers the user high wear resistance, low friction, good electrical properties and chemical inertness. This material is the most widely used and provides superior functionality as a sleeve, flange or thrust bearing. AMILON™ 65 can be bonded to nearly any surface to provide wear resistance and reduced friction. This material is used in applications at temperature extremes from -400°F to +500°F. AMILON™ 65 is available in molded rods and cylinders as well as skived or molded sheets.

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**APPLICATIONS: PUMPS, COMPRESSORS, INSULATORS**

**COLOR: DARK MAROON**

**THE ALTERNATIVE TO RULON® LR**

Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	2.27
Hardness (initial)	Shore D	ASTM D2240	62
Hardness (15 second)	Shore D	ASTM D2240	57
Tensile Strength	psi	ASTM D4745	2550
Elongation	%	ASTM D4745	225
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	3
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	4.9 x 10 <sup>-5</sup> 5.7 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.3
Water Absorption	%	ASTM D570	0

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# AMILON™ 77



## AMILON™ 77

AMILON™ 77 affords the user the lowest coefficient of friction. It works well in applications against soft mating surfaces like aluminum, mild steel, or bronze. AMILON™ 77 does not gall surfaces on mating parts. It is used in applications ranging in temperature from -400°F to +500°F. AMILON™ 77 is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: COMPRESSORS, AUTOMOTIVE,  
INSULATORS**  
**COLOR: GREEN**  
**THE ALTERNATIVE TO RULON® F**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	1.85
Hardness (initial)	Shore D	ASTM D2240	67
Hardness (15 second)	Shore D	ASTM D2240	62
Tensile Strength	psi	ASTM D4745	2520
Elongation	%	ASTM D4745	165
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	2.9
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	5.0 x 10 <sup>-5</sup> 5.8 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft²F)	W / mK	ASTM E1530	.21
Water Absorption	%	ASTM D570	0



# AMILON™ 92



## Amilon™ 92

AMILON™ 92 offers low coefficient of friction, good wear and abrasion resistance for both seal and bearing applications. This material can be run on non-metallic and non-ferrous mating surfaces due to its all plastic nature. AMILON™ 92 is the best grade for aluminum or other soft mating surfaces. This material is used in applications at temperature extremes from -400°F to 500°F. AMILON™ 92 is available in molded rods and cylinders as well as skived or molded sheets.

**APPLICATIONS: AIR COMPRESSORS, AUTOMOTIVE, INSULATORS**  
**COLOR: GOLD**  
**THE ALTERNATIVE TO RULON® J**

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Property	Units	ASTM Method	Typical Values
Specific Gravity	g/cc	ASTM D4745	1.92
Hardness (initial)	Shore D	ASTM D2240	64
Hardness (15 second)	Shore D	ASTM D2240	60
Tensile Strength	psi	ASTM D4745	2510
Elongation	%	ASTM D4745	235
Deformation Under Load (Permanent deformation after 24 hrs, 2175 psi)	%	Based on D-621	3
Coefficient Of Linear Thermal Expansion (75°F - 200°F molded direction) (75°F - 300°F molded direction)	in/in/°F	ASTM E831	5.4 x 10 <sup>-5</sup> 6.3 x 10 <sup>-5</sup>
Thermal Conductivity (2.09BTU in / hr ft <sup>2</sup> F)	W / mK	ASTM E1530	.21
Water Absorption	%	ASTM D570	0