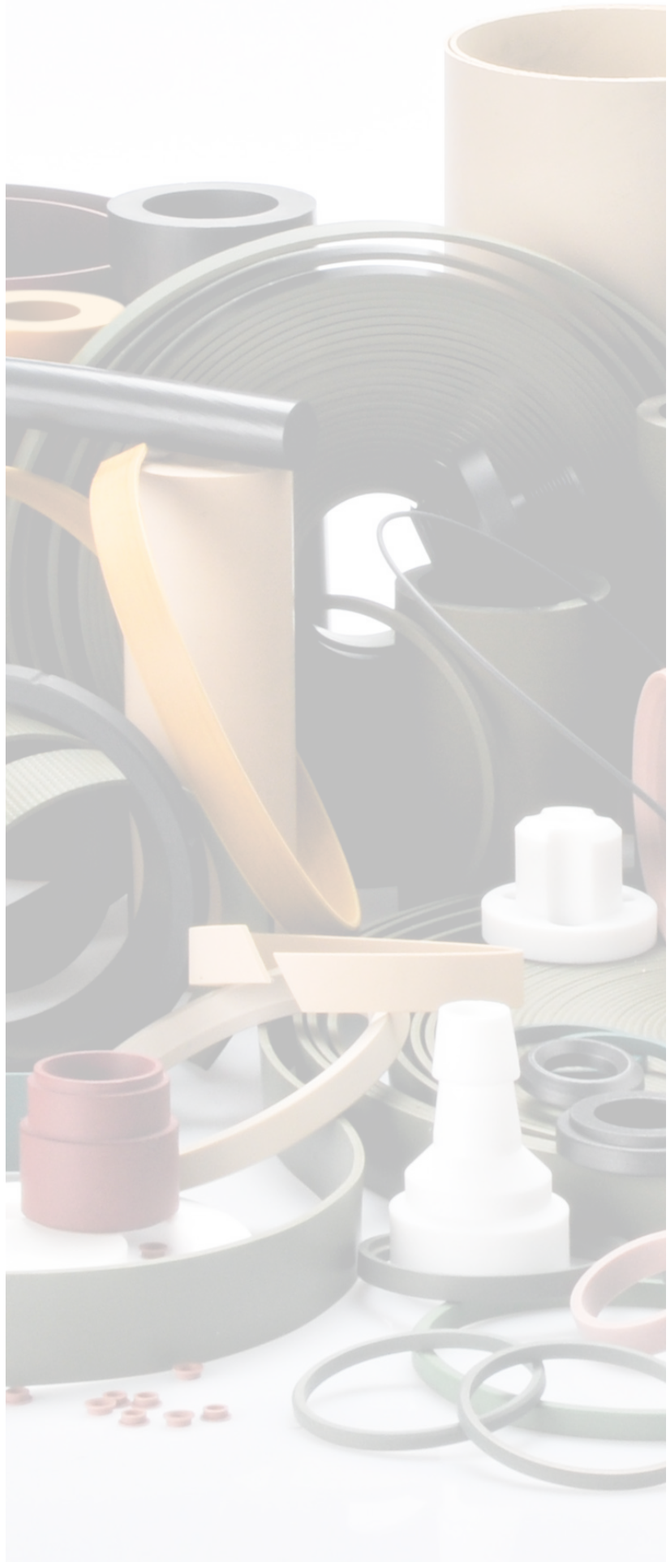
HPM
High Performance Materials

Low Friction
High Wear Resistance

Chemical Resistance
Low Maintenance

YOUR CHOICE FOR FLUOROBASED PRODUCTS
GUARNIFLON®



HPM Catalogue

Global Presence, Local Expertise

Founded in 1982, Guarniflon® began its journey in the Italian market before expanding internationally. Over the years, Guarniflon® has built a robust network comprising:

- 6 companies across Europe;
- 4 overseas operations in India, USA, Canada, and China;
- 11 companies based in Italy;
- 3 divisions operating nationally.

This strategic structure fosters synergy across borders and enables constant market monitoring. Real-time data collection supports agile decision-making in the transformation of fluoropolymers, Guarniflon®'s core area of expertise.

Thanks to its responsiveness and forward-thinking approach, Guarniflon®'s global network offers one of the most effective gateways to accessing new market segments.

In 2015, Guarniflon® became part of Mazza Holding S.p.A., marking a major milestone in the company's path toward consolidation and worldwide expansion.

7000 Tons/Year
PTFE Materials Processed

500
People Involved

3300
Regular Customers

73
Supplied Countries

HPM
High Performance Materials

In addition to its wide range of existing PTFE products, **Guarniflon**® proudly offers an advanced line of High Performance Materials (HPM). These PTFE compounded grades are engineered for high-demand applications including tapes, bearing strips and mechanical components.

Maintaining the renowned advantages of standard PTFE (such as chemical resistance and non-stick properties), Guarniflon® HPM grades also offer enhanced performance features:

- Ultra-low coefficient of friction;
- High mechanical strength and hardness;
- Excellent dimensional stability and minimal cold flow;
- Resistant to extreme temperatures;
- Outstanding pressure resistance.

Etched variants are available to support high-performance bonding and integration, making them ideal for demanding mechanical and tribological applications.

Custom Compounds on Demand: for specialized needs not covered in this catalogue, Guarniflon® can supply tailored compounds upon request.

Materials Properties

Tribological Properties
- Excellent performances in dry conditions at high PV values (operating pressure • surface velocity). The PV value in dry conditions (max: 1.7 MPa • m/s) can be widely overcame in case of lubricated applications;
- Extremely low coefficient of static and dynamic friction;
- Extremely low stick-slip effect;
- Excellent wear resistance even in dry applications.

Thermal Properties
- Stable behavior at operating temperatures from -240°C to +260°C and for short time up to +280°C;
- Dimensional stability;
- Excellent thermal dissipation capacity (for specific grades).

Chemical Properties
- Excellent chemical inertness;
- Operability in salt water, steam environment or aggressive and corrosive chemical environments;
- Good gas proofness (for specific grades).

Electrical Properties
- Good dielectricity (insulation);
- Excellent conductivity for antistatic applications.

Mechanical Properties
- Extremely high PV and sliding behavior;
- High load compression resistance (radial/axial);
- Low abrasive surface for applications on soft countersurfaces;
- Excellent vibration dampening and noiseless.

Other Typical Properties
- Flexibility and fatigue stress resistance.
- Atoxicity and excellent performances for food and pharma industries (specific grades).

Products Description

Bearing Tapes

Engineered for peak performance across demanding applications in hydraulics, motion control, and mechanical systems, bearing tapes are available in a range of standard materials designed to meet the highest performance requirements. Manufactured using advanced PTFE-based compounds and proprietary technologies, these tapes are tailored to fulfill the specific needs of Guarniflon® customers.

To ensure optimal durability and mechanical stability, specialized fillers are incorporated to enhance:
- Wear resistance for long-lasting operation;
- Low coefficient of friction to minimize energy loss;
- High compression strength for improved load handling.

These properties make the tapes ideal for use in the harshest environments, delivering reliable service life and precision performance.

Skiving Capabilities & Application Performance

Thanks to advanced technologies available at Guarniflon®, most tape materials can be skived with precision to thicknesses up to 6 mm, tailored to meet customer-specific requirements, allowing for customized solutions across a wide range of industrial needs.

These materials exhibit excellent performance in applications where friction reduction is critical, such as in sliding systems, mechanical interfaces, or high-wear environments. Their low-friction properties contribute to improved operational efficiency, reduced component wear, and extended service life.

PTFE Rings Advanced Resistance for Static and Dynamic Applications

For static seals and flange connections where conventional ring materials fall short, PTFE rings provide an optimal solution. Their superior chemical and thermal resistance makes them ideal for challenging environments that demand long-term reliability and material integrity.

Guarniflon® offers PTFE rings in both standard sizes and customized dimensions, manufactured to meet precise customer specifications. This flexibility ensures compatibility with a wide range of system requirements and performance needs. The exceptional sliding characteristics of PTFE products offer the best performance even in dynamic applications, where sliding between moving elements is enhanced by the self-lubricating properties of PTFE.

Advantages of PTFE Rings:
- Exceptional chemical resistance to aggressive substances;
- High thermal stability across extreme temperature ranges;
- Customizable dimensions for specialized configurations;
- Reliable sealing performance in static assemblies.

Etching Technology Precision Surface Activation for PTFE

Guarniflon® utilizes the most advanced etching technologies available in the industry, designed to treat both semi-finished and finished PTFE products with exceptional consistency and control. These cutting-edge processes enable the creation of uniformly reactive surfaces that are essential for reliable bonding and integration into complex assemblies.

Whether preparing components for adhesive bonding, lamination, or composite construction, Guarniflon®'s etching solutions ensure optimized surface energy levels across varied geometries and material grades.

Process Highlights:
- High precision surface activation via chemical/plasma etching;
- Uniform reactivity across entire product surfaces;
- Suitable for standard and custom PTFE configurations;
- Scalable for large production runs or bespoke solutions.

Machined Components High-Performance Precision at Scale

Guarniflon®'s automatic turning machines and CNCs deliver exceptional productivity, with a capacity to produce over 2 millions pieces per day. Engineered for speed and consistency, these technologies are the backbone of high-volume manufacturing.

To ensure uncompromising quality standards, Guarniflon® integrates SPC (Statistical Process Control), a robust electronic system that continuously monitors production metrics. This allows for early detection of anomalies, minimizes variability, and guarantees stable, high-quality output.

Available Technologies

Automatic Moulding
Custom bearings

Compression Moulding
Components, rods, tubes and sheets

Isostatic Moulding
Rods and tubes

Pressure / Sintering Moulding
Billets for high performance tapes and films

Extrusion
Rods and tubes

Skiving
Tapes and films

Machining
CNC & automatic turning custom made parts

Materials Selection Guide

	G471	G461	G729	G453	G412	G418	G479	G464 G488 G417 G548	G416	G506	G458
	Standard bearing grade, high creep and abrasion resistance	Lowest coefficient of friction, excellent insulator	Widely used in the food process industry	Very good operation in wet envi-ronments	Good thermal and electrost. dissipation	Excellent abrasion resistance	The best against alluminium surfaces	Extensively used machine tool guide ways	Guide ways and piston rings	Guide ways	Piston rings
Color	Dark Red	Yellow	White	Black	Dark Grey	Grey Blue	Light Brown	Green	Brown	Brown	Brown
Max Load P (psi)	1	750	1	1	1	1	1,2	1	1	1,2	1,2
MPa	6.9	5.2	6.9	6.9	6.9	6.9	8.3	6.9	6.9	8.3	8.3
Max Speed V (fpm)	400	400	400	400	400	400	400	400	400	400	400
m/s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max PV (psi-fpm)	10	7,5	10	10	10	10	10	10	10	10	10
(MPa • m/s)	0,35	0,26	0,35	0,35	0,35	0,35	0,35	0,35	0,35	0,35	0,35
Rb 25 & Higher		•	•	•	•	•	•				
Rc 35 & Higher	•							•	•	•	•
Painted Metal and Porcelain						•					
Aluminium		•					•				
Steam	•		•	•	•	•	•	•	•	•	•
Wet	•		•	•	•	•	•	•	•	•	•
Dry	•	•	•	•	•	•	•	•	•	•	•
Vacuum	•	•	•			•	•	•	•	•	•
Coefficient of Friction	4	1	1	2	2	3	1	2	2	2	2
Creep Resistance	4	3	4	4	4	4	4	5	5	5	5
Insulative prop.	•	•	•	•	•	•	•	•	•	•	•

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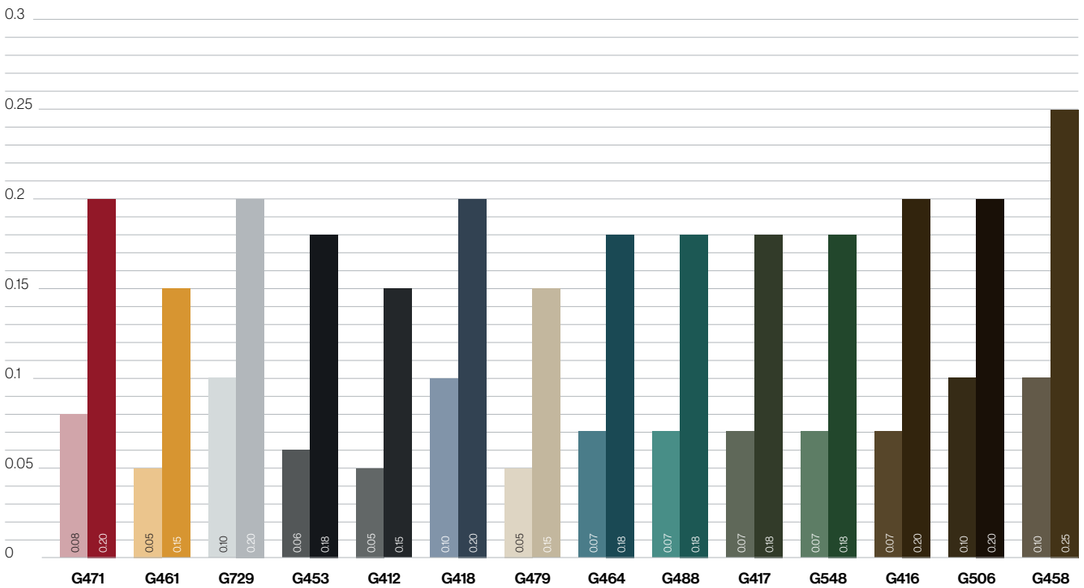
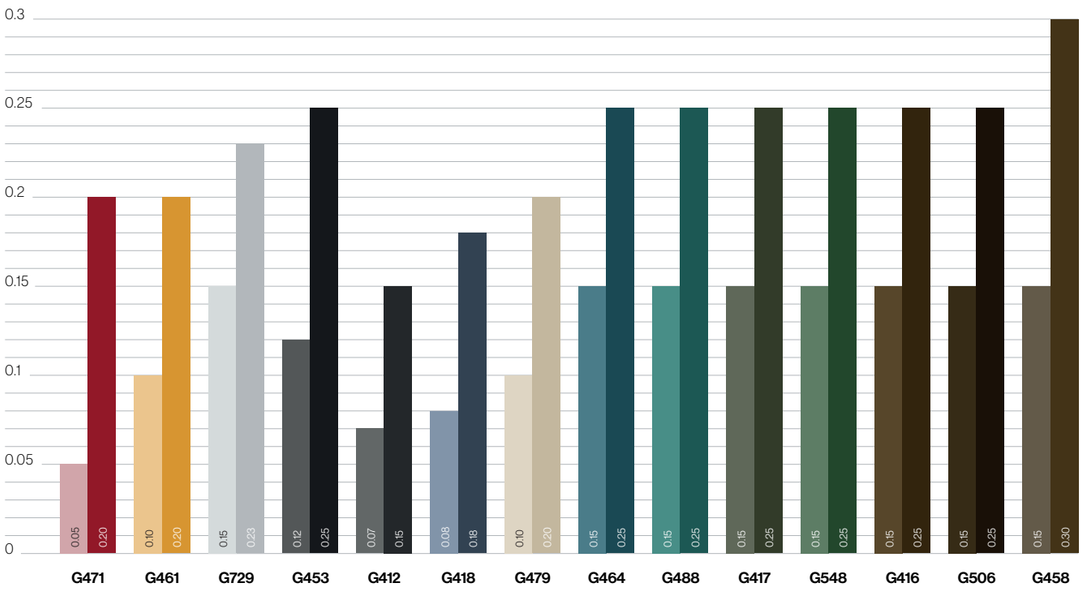
Dry Coefficient of Friction
ASTM D3702

Static Min - Max



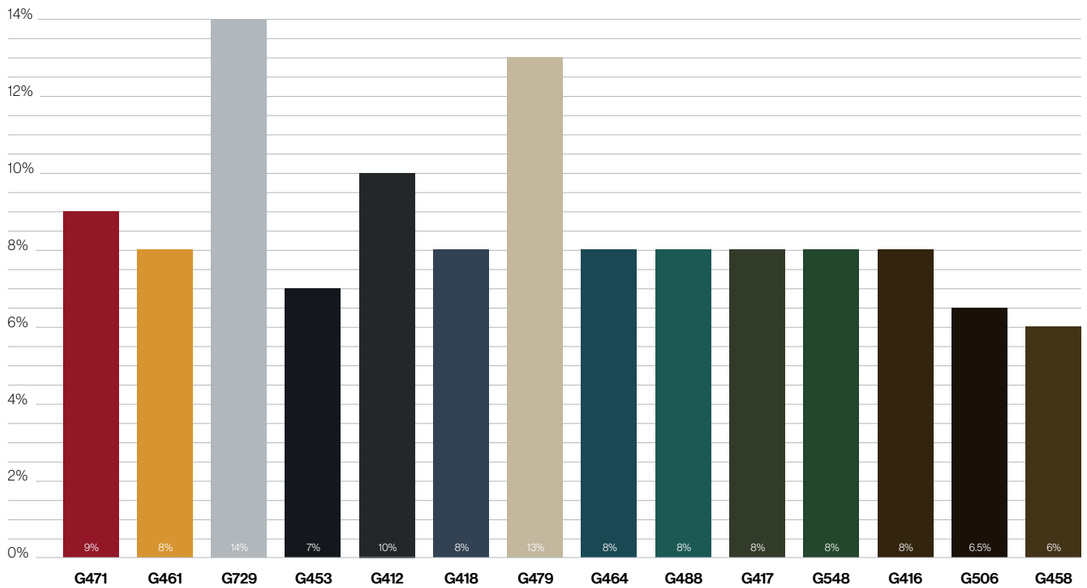
Dynamic Min - Max



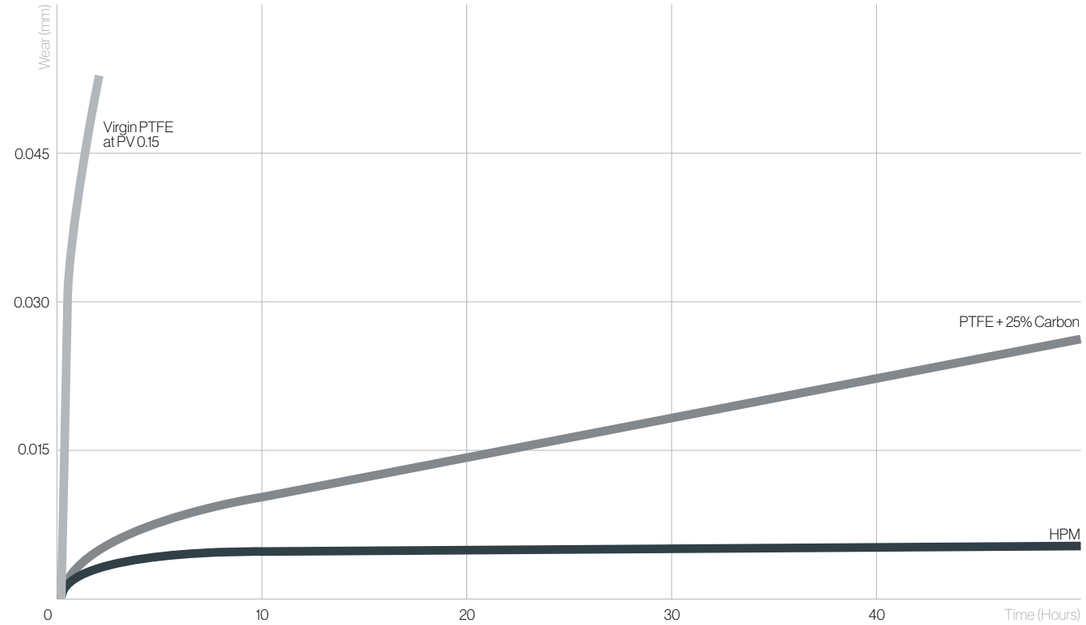
Note: The values relevant to the dry coefficient of friction have to be considered as merely indicative, suitable only for a comparison of materials in the same operating conditions. They depend and are strongly influenced by the loads applied, speed, operating temperature, the environment conditions, the type of mated materials, the surface finish of the counterparts.

Deformation Under Load
ASTM D621

Max Typical Value % Room temperature (24 hours) at 13.7 N/mm²

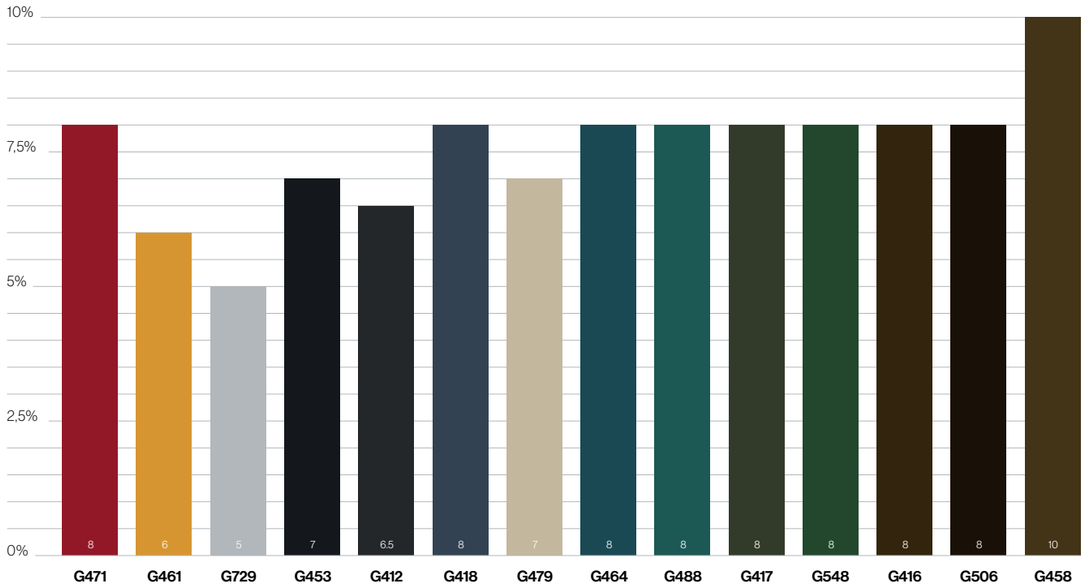


Wear Rate Comparison
High Performance Materials vs Traditional PTFE At PV 0.7 (0.7 N/mm² • m/s)

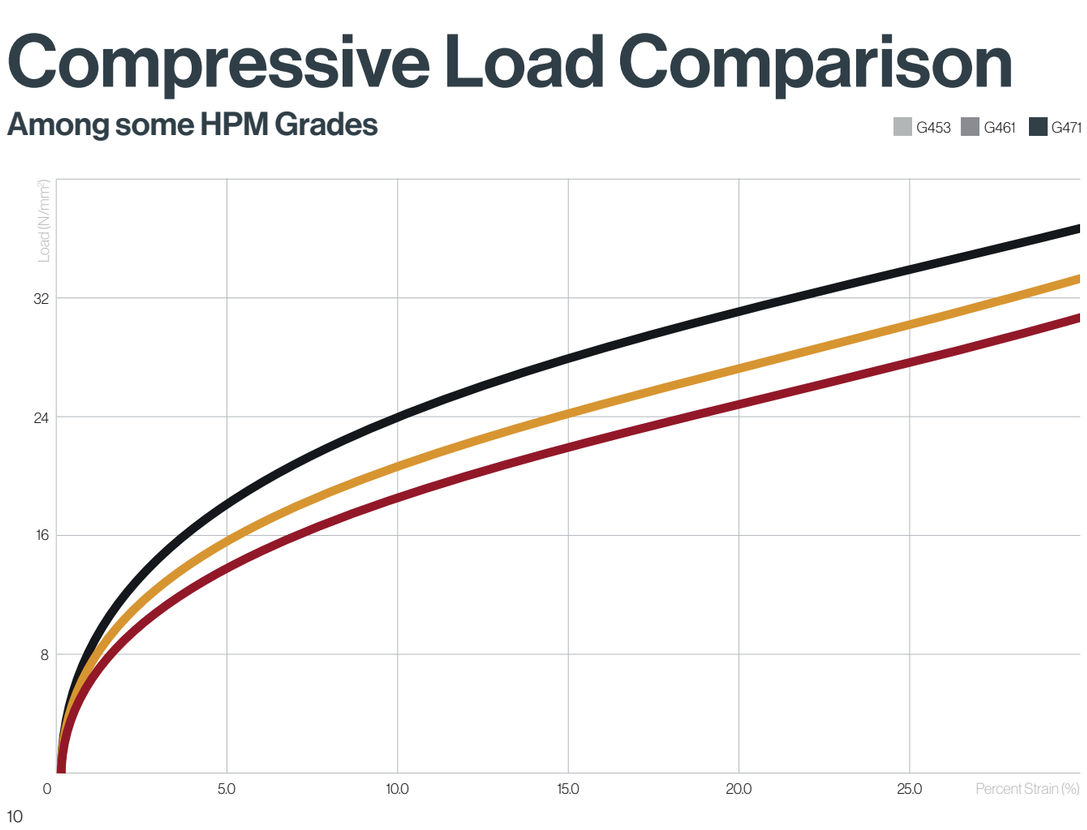


Compressive Strength
ASTM D695

Min Typical Value At 1% Deformation



Compressive Load Comparison
Among some HPM Grades



G471 G461 G729 G453 G412 G418 G479 G464 G488 G417 G548 G416 G506 G458

HPM G471

Dark Red Colour

General purpose dry bearing material for bushing and sliding pads for mechanical applications in general. Slide ways for machine tools.

High wear and abrasion resistance, good compressive properties. Suitable for the majority of dry bearing applications against hard countersurfaces.

Good electrical insulating properties.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded and Extruded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

Compressors
Insulators
Pumps
Linear Slides
Wear Bands
Automotive

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	2.20 – 2.30
Hardness - Shore D	–	ASTM D2240	≥ 60
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 14
Elongation at Break CD**	%	ASTM D4745	≥ 170
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 8
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 9
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 4
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.05 – 0.20
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.010 – 0.020
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	9 – 11

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* (PV=0,7 N/mm² • m/s)
** CD = Cross Direction

G471 G461 G729 G453 G412 G418 G479 G464 G488 G417 G548 G416 G506 G458

HPM G461

Yellow Colour

The lowest coefficient of friction in dry applications. Suitable for the machining of bearings and other sliding parts for the food industry or for any other use in contact with soft materials such as aluminium, copper alloys, inox steel, polymeric substrates, etc.

Very good wear resistance, compression resistance, high flexibility and tensile strength, excellent insulating properties. It can be used in contact with food products.

Products

Moulded Tubes
Moulded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

Air Compressors
Insulators
Pumps
Linear Slides
Mechanical Textile
Automotive

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	1.85 – 2.05
Hardness - Shore D	–	ASTM D2240	≥ 55
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 15
Elongation at Break CD**	%	ASTM D4745	≥ 250
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 6
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 8
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 6
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.10 – 0.20
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.010 – 0.020
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	9 – 11

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* (PV=0,7 N/mm² • m/s)
** CD = Cross Direction

G471 G461 **G729** G453 G412 G418 G479 G464 G488 G417 G548 G416 G506 G458

HPM G729

White Colour

Its excellent load and wear characteristics together with the capability to stand a wide range of temperatures, make G729 the perfect material for bearings for food and pharmaceutical applications.

High compatibility with a wide range of mating surfaces. G729 is unaffected by all common acids, bases and solvents.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Skived Tapes
Machined Parts
Piston Rings
Seals

Applications

- Compressors
- Insulators
- Pumps
- Linear Slides
- Wear Bands
- Automotive

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	2.17 – 2.25
Hardness - Shore D	–	ASTM D2240	≥ 55
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 14
Elongation at Break CD**	%	ASTM D4745	≥ 200
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 5
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 14
Permanent Deformaton as above after releasing	%	ASTM D621	6 – 9
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.15 – 0.23
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.015 – 0.023
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	7 – 10

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* (PV=0,7 N/mm² • m/s)
** CD = Cross Direction

G471 G461 G729 **G453** G412 G418 G479 G464 G488 G417 G548 G416 G506 G458

HPM G453

Black Colour

For bearing and sliding parts. Piston bearer rings for no-lubricated reciprocating compressors and for automotive applications.

Very good load carrying properties combined with low friction and high wear resistance. Good thermal and electrostatic dissipation.

Suitable for wet operating conditions and for contact with corrosive agents.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings
Cup Seals

Applications

- Compressors
- Plating Tanks
- Pumps
- Linear Slides
- Wear Bands
- Automotive
- Valve Seats

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	1.05 – 2.11
Hardness - Shore D	–	ASTM D2240	≥ 60
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 13
Elongation at Break CD**	%	ASTM D4745	≥ 70
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 7
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 7
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 5
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.12 – 0.25
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.010 – 0.020
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	10 – 12

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G471 G461 G729 G453 **G412** G418 G479 G464 G488 G417 G548 G416 G506 G458

HPM G412

Dark Grey Colour

Non-abrasive PTFE compound for softer mating surfaces, such as stainless steel. High resistance to deformation, extremely low coefficient of friction and good thermal and electrostatic dissipation.

Use in water reduces the wear rate. Not suggested for using in ultra-dry, vacuum applications, or where electrical insulation is desired.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

Compressors
Automotive Lip Seals
Pumps
Linear Slides

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	2.15 – 2.15
Hardness - Shore D	–	ASTM D2240	≥ 55
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 15
Elongation at Break CD**	%	ASTM D4745	≥ 170
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 6.5
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 10
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 6
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.07 – 0.15
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.015 – 0.025
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	12 – 13

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** CD = Cross Direction

G471 G461 G729 G453 G412 **G418** G479 G464 G488 G417 G548 G416 G506 G458

HPM G418

Grey / Blue Colour

The appropriate choice for applications in hydrogen and natural gas compressors, thanks to its excellent wear resistance, especially in extremely dry environments.

Its almost universal chemical resistance enables it to withstand corrosives and acids sometimes present in trace amounts in these environments.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

Air Compressors
Insulators
Pumps
Linear Slides
Mechanical Textile
Automotive

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	2.20 – 2.30
Hardness - Shore D	–	ASTM D2240	≥ 55
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 15
Elongation at Break CD**	%	ASTM D4745	≥ 200
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 8
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 8
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 4
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.18 – 0.18
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.015 – 0.021
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	9 – 12

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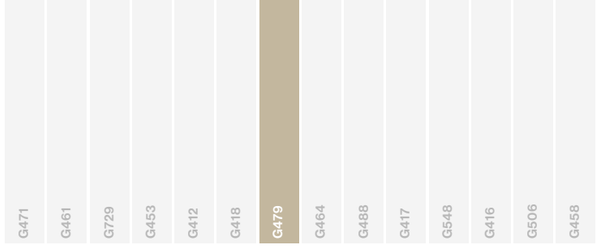

HPM G479

Light Brown Colour

General purpose dry bearing material for bushing and sliding pads for mechanical applications in general. Slide ways for machine tools.

High wear and abrasion resistance, good compressive properties. Suitable for the majority of dry bearing applications against hard countersurfaces.

Good electrical insulating properties.

Products

Moulded Tubes
Moulded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

- Compressors
- Insulators
- Pumps
- Linear Slides
- Wear Bands
- Automotive

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	2.20 – 2.30
Hardness - Shore D	–	ASTM D2240	≥ 60
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 14
Elongation at Break CD**	%	ASTM D4745	≥ 170
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 8
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 9
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 4
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.05 – 0.20
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.010 – 0.020
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10⁻⁵/°C	ASTM D696	9 – 11

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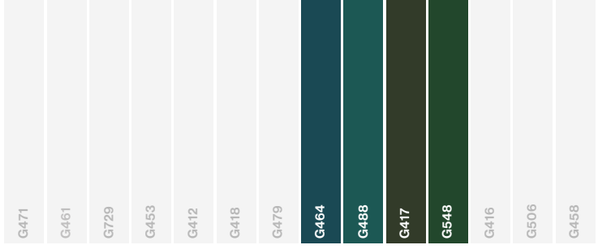
* (PV=0,7 N/mm² • m/s)
** CD = Cross Direction



HPM G464 G488 G417 G548

Bronze Filled Compounds **Blue / Green Colour**

Range of bronze filled PTFE compounds, with a unique blend of additional inorganic ingredients produced to specific market requirements. Special fillers to satisfy arduos applications.

Excellent mechanical properties, perfect for machine tool applications. Engineered compounds developed for use in linear bearing elements and to avoid metal-to-metal sliding contacts. Self lubricating, wear resistant materials providing low friction, stickslip free operation, better positioning accuracy and repeatability, vibration dampening, long life with minimum wear. Dimensionally stable, maintenance free, operable with(out) lubrication.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

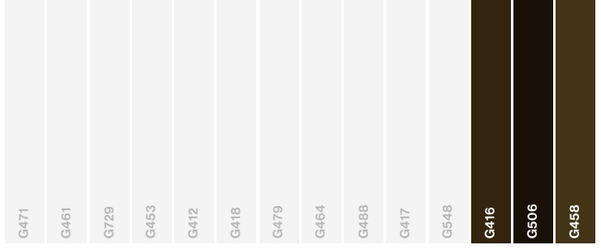
Applications

- Compressors
- Insulators
- Pumps
- Linear Slides
- Wear Bands
- Automotive
- Machine Tools

Typical Properties	Unit	Method	Data
Physical – Mechanical			
Density	g/cm³	ASTM D792	3.00 – 3.20
Hardness - Shore D	–	ASTM D2240	≥ 58
Tensile Strength CD**	N/mm²	ASTM D4745	≥ 20
Elongation at Break CD**	%	ASTM D4745	≥ 250
Compressive Strength at 1% Deformation	N/mm²	ASTM D695	≥ 8
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm²	%	ASTM D621	≤ 8
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 4
Dynamic Coefficient of friction (PV=0,7 N/mm² • m/s)	–	ASTM D3702	0.15 – 0.25
Wear Factor (PV=0,7 N/mm² • m/s)	µm/h • N/mm² • m • min	ASTM D3702	0.010 – 0.030
Thermal			
Service Temperature (Min – Max)	°C	–	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10⁻⁵/°C	ASTM D696	8 – 10

Note: the data listed herein fall within the normal range of product properties described, but they should not be used to establish specification limits nor used alone as the basis of design. Guarniflon® Spa assumes no obligation or liability for any advice furnished by it or for results obtained to these products.

* (PV=0,7 N/mm² • m/s)
** CD = Cross Direction



HPM
G416 G506 G458

Bronze Filled Compounds **Brown Colour**

The additional HPMs belonging to the PTFE bronze compounds group have technical behavioural differences. Specific fillers to satisfy the heaviest applications, excellent mechanical properties, perfect for machine tool applications. Engineered compounds developed for use in linear bearing element and to avoid metal-to-metal sliding contacts. Self lubricating, wear resistant materials providing low friction, stick-slip free operation, better positioning accuracy and repeatability, vibration dampening, long life with minimum wear. They are dimensionally stable, maintenance free and can be operated with or without lubrication.

Products

Moulded and Extruded Tubes
Moulded and Extruded Rods
Moulded Sheets
Skived and Bearing Tapes
Machined Parts
Piston Rings

Applications

- Compressors
- Pumps
- Wear Bands
- Machine Tools
- Insulators
- Linear Slides
- Automotive

Typical Properties	Unit	Method	G416 Data	G506 Data	G458 Data
Physical – Mechanical					
Density	g/cm^3	ASTM D792	2.98 – 3.16	3.41 – 3.61	3.75 – 3.95
Hardness - Shore D	–	ASTM D2240	≥ 58	≥ 60	≥ 62
Tensile Strength CD**	N/mm^2	ASTM D4745	≥ 18	≥ 15	≥ 15
Elongation at Break CD**	%	ASTM D4745	≥ 200	≥ 200	≥ 100
Compressive Strength at 1% Deformation	N/mm^2	ASTM D695	≥ 8	≥ 8	≥ 10
Deformation Under Load at Room Temperature (24 hours) at 13,7 N/mm^2	%	ASTM D621	≤ 8	≤ 6.5	≤ 6
Permanent Deformaton as above after releasing	%	ASTM D621	≤ 5	≤ 3	≤ 2.5
Dynamic Coefficient of friction (PV=0,7 N/mm^2 • m/s)	–	ASTM D3702	0.15 – 0.25	0.15 – 0.25	0.15 – 0.30
Wear Factor (PV=0,7 N/mm^2 • m/s)	µm/h•N/mm^2•m•min	ASTM D3702	0.010 – 0.030	0.010 – 0.030	0.010 – 0.030
Thermal					
Service Temperature (Min – Max)	°C	–	- 200 / + 260	- 200 / + 260	- 200 / + 260
Thermal Expansion Coefficient (linear) 25 - 100°C	10^{-5}/°C	ASTM D696	8 – 11	7 – 9	7 – 8

Note: the data listed herein fall within the normal range of product properties described, but they should not be used to establish specification limits nor used alone as the basis of design. Guarniflon® Spa assumes no obligation or liability for any advice furnished by it or for results obtained to these products.

* (PV=0,7 N/mm^2 • m/s)
** CD = Cross Direction

R&D Team
Quality Management

Guarniflon® have been **Quality Certified** since **1993**, certificate **n. 015**, one of the first in its own field. Nowadays Guarniflon® is **UNI EN ISO 9001:2015** and **IATF 16949:2016** certified by the certification body Cermet.

Guarniflon® policy implies a high powered and experienced R&D Team continuously improving and developing day by day new solutions for new applications.

Material Compliance and Approvals

Guarniflon® offer and extremely wide range of Quality Approvals for:

- Food
- Oil & Gas
- Drinking Water
- Gas
- Medical / Pharmaceutical
- REACH & RoHS

← **Our Certifications**

UNI EN ISO 9001:2008

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