



مؤسسة منصور الجعويني
MANSOUR AL JAWINI EST.



YOUR CHOICE FOR FLUOROBASED PRODUCTS
GUARNIFLON®



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GUARNIFLON.COM



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COMPANY PROFILE

With more than 6000 tons. per year, Guarniflon is one of the world's leading manufacturers of fluorobased machined and semifinished products.

Guarniflon production is based on:

extruded and moulded tubes and rods, sheets, films, tapes and machined products in virgin and compounded PTFE and other fluorobased materials.

Established in 1982, today Guarniflon leads a group of 7 international companies. The present leadership was reached thanks to the quality management system which meets customer requirements.

Guarniflon today:

6000	Tons of fluoropolymer materials processed every year
450	People involved
3300	Regular Customers
73	Countries reached
7	Branche offices and companies

Main industrial application fields of Guarniflon products are chemical, petrochemical, valves, hydraulic and pneumatic, machine tools, electronics, electromechanical, automotive, pharmaceutical, medical, food, aerospace, etc.

An international network with its Headquarters in Italy.

QUALITY MANAGEMENT - R&D TEAM

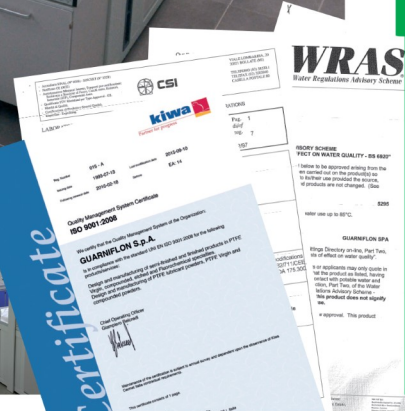
Since 1993, Guarniflon is working with a Quality Management System in accordance with UNI EN ISO 9001.

Thanks to a modern and qualified laboratory equipped with the most updated apparatus, special physical-chemical-electrical and mechanical testing and analysis are daily performed complying with international standards such as ASTM, DIN, BSI, ISO, etc.

The laboratory is run by a skilled and experienced team, able to test and make all quality controls in incoming, in process and ready-to-deliver materials and products, in order to grant Guarniflon customers the best quality and service.

In addition to this, an innovative electronic S.P.C. system has been developed since 1993, connected with the machining of the PTFE final products, allowing the operators to keep steadily under control and store the dimensional data of the products during the process.

Guarniflon policy implies a high powered and experienced R & D team continuously improving and developing - day by day - new solutions for new applications, also in close cooperation with some relevant University Institutes.





HPF - HIGH PERFORMANCE FILMS

High Performance Films from Guarniflon are skived and melt extruded fluoropolymer films engineered by Guarniflon Spa R&D Department to allow the customers to select the right film for their application requirements.

A wide range of grades including PTFE, FEP, PFA, ETFE, PVDF, THV, to match right combination of physical chemical performances in a variety of key market segments including composite molding for the automotive and aerospace industries, chemical processing, electrical/electronics, renewable energies and marine.

TEKFILM

SKIVED AND EXTRUDED FILMS

PTFE skived tapes and films that can be offered also calendered or ultra flat. Tapes and films can be chemically etched. Thermoprocessables fluoropolymers skived tapes and films in FEP - PFA - MFA. Extruded films made by FEP - ETFE - THV - PVDF - PFA.

TEKBOND

PRESSURE SENSITIVE ADHESIVE TAPES

Premium Quality Pressure Sensitive Adhesive Tapes, offered with or without release liners in Fluorosilicone, Polyethylene, PVC, Paper.

Two different adhesive systems: Acrylic and Silicone.

TEKLEASE

RELEASE FILMS

Special products developed as release films for composite industry applications.

Perforation capability available.



AREOSPACE



ELECTRONICS



SOLAR ENERGY



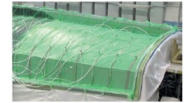
TRANSPORTATION



AUTOMOTIVE



MARINE



SC SERIES

THE SOLUTIONS TO PROBLEMS OF SEALING

Developed by Guarniflon R&D team, SC series is a superior and unique material for gasket (flat sealing) applications.

The overall benefits of Guarniflon SC series over that of both conventional PTFE and competitive PTFE/filler blends are found in the areas of environmental improvement (they are asbestos free) and overall cost saving.

Main applications in the chemical, petrochemical, pharmaceutical, food, paper industries.

SC1100	SC1200	SC1400	SC1600
<ul style="list-style-type: none"> Superior chemical resistance Excellent resistance to deformation - No ageing Good compressibility High sealability No water absorption Non-flammable Easy maintenance (assembling / disassembling) 	<ul style="list-style-type: none"> Superior chemical resistance Excellent resistance to deformation No ageing High compressibility High sealability No water absorption Non-flammable Easy maintenance (assembling / disassembling) 	<ul style="list-style-type: none"> Superior chemical resistance Strong acid, solvents, hydrocarbons, chlorine Water and steam Excellent resistance to deformation No ageing High compressibility Superior sealability for a wide range of pressure and temperature - No water absorption Non-flammable Easy maintenance (assembling / disassembling) 	<ul style="list-style-type: none"> Superior chemical resistance Acids, solvents, hydrocarbons, refrigerant, water Low bolt load No ageing Excellent compressibility - Superior sealability No water absorption Non-flammable Easy maintenance (assembling / disassembling)
	<ul style="list-style-type: none"> APPROVALS Complies with FDA protocols 21 CFR 177.1560 21 CFR 175.300 Complies with REG. EU 10/2011 Complies with TA-Luft VDI 2440 	<ul style="list-style-type: none"> APPROVALS Complies with FDA protocol Certified by BAM (Gaseous Oxygen, 200°C, 25 bar) In compliance with TA-Luft VDI 2440 	<ul style="list-style-type: none"> APPROVALS Complies with FDA 21 CRF 177.1560 Complies with TA-Luft VDI 2440



HIGH PERFORMANCE PTFE BASED COMPOUNDS

The material of the **filled grades of G Series** range are among the best solutions today offered by the market to resolve tribological applications where the most critical operating conditions are present.

The capability of operating completely dry makes of filled grades of G Series the right answer for applications where to lubricate could be a tough problem (because of inaccessibility, extreme temperatures, chemical corrosion or risk of contaminating other products, such as food or drugs). The materials of the filled grades of G Series range offer the best combination of properties in terms of low coefficient of friction and high wear resistance in a wide variety of operating situations. For special application needs also special grades filled with alumina, calcium fluoride, PPS, PEEK and other fillers are available. Today Guarniflon has available more than 80 different compounds providing solutions to the most tribological applications.



The main advantages offered by the filled grades of G Series materials are:

- dry running capability/self-lubricant properties
- low coefficient of friction
- high wear resistance
- load carrying capabilities
- low relative abrasiveness
- operating temperature from -200°C up to $+260^{\circ}\text{C}$
- thermal dissipation and antistatic properties
- chemical inertness and atoxicity
- dimensional stability
- flexibility and fatigue stress resistance
- vibrations dampening/low noise running
- low dirtying characteristics
- food contact compatibility
- dielectric properties

THE ETCHING TECHNOLOGY OF GUARNIFLON

The etching process consists in a chemical surface treatment on virgin or filled PTFE products. It allow PTFE to be glued, by means of special adhesive, on to surfaces of various materials, such as rubber, metal, plastic, etc. The new etching process of Guarniflon is capable of providing uniformly reactive surfaces by continuous control of solution concentration and contact time with PTFE.

Key properties

- Uniform etching
- Safe and non-pollution process
- Clean and contamination-free etched surfaces
- Unique etching capabilities on
 - Thin film
 - Irregular surfaces
- Treatment on one or both sides

Wide range of products in virgin and filled PTFE

- Sheets
- Skived sheets and tapes
- Tubes
- Rods
- Machined parts

The type of machines and equipments where the filled grades of G Series products are mostly used

Application Fields	Products
Machine tools	Tapes at various thickness etched for bonding, for slide ways lining of lathes, boring and milling machines, grinding machines, wood working machines, etc.
Valves and solenoid valves	Valve seats, solenoid valve plugs
Textile machines and accessories for the textile industry	Standard and special bearings and bushings, lining of flexible rapiers, sealing elements, parts of special conformation, for textile looms, spinning machines, finishing machines, dyeing equipments, etc.
Building Industry	Sheets and tapes cut-to-size, etched for bonding for thermal expansion bearing and sliding pads of tanks, heat exchangers, pipelines, etc.
Machines for the food industry	Standard and special bearings and bushings, parts of special conformation, special seals for milking machines, dairy equipments, bakery machines, tomato treatment plants, fruit juice making plants, etc.
Packing and packaging machines	Standard and special bearings and bushings, parts of special conformation, for bottling and filling machines of food and pharmaceutical products and cosmetics, blistering, wrapping and cartooning machines.
Cars and their components	Bearings and bushings also of special conformation for hinges, suspension systems, shock absorbers, etc.
Dry reciprocating compressors	Piston rings, cup seals, bearer rings, for industrial compressors for air and gases, hobbyistic compressors



VIRGIN AND FILLED PTFE

The **G Series** names a family of products based on polytetrafluoroethylene (PTFE), both virgin and filled with different reinforcing ingredients and additives.

The G Series range includes beside the virgin grade, a number of standard types filled with glass fibers, carbon powders, graphite, and bronze powders in different percentages and combinations. G Series products are available as basic shapes and finished parts, standard and special.

The base characteristics of virgin PTFE are the ones offering a unique combination of:

- low coefficient of friction (the lowest among all solid materials known)
- excellent chemical inertness
- extremely non-adhesive surface (practically no products could stick on it)
- wide temperature withstanding (from -200°C up to $+260^{\circ}\text{C}$)
- excellent dielectric properties
- toughness and flexibility balance

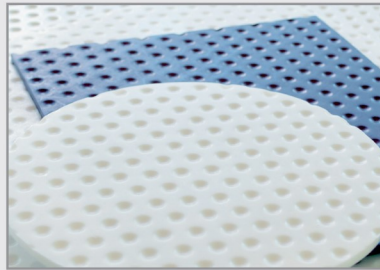


Filled grade in respect with virgin PTFE offer a substantial improvement of:

- wear resistance in sliding applications
- low deformation under compressive loads
- low thermal expansion
- thermal dissipation

G Series basic shapes include:

- extruded rods from mm. 3 up to mm. 115
- moulded rods from mm. 30 up to mm. 530
- extruded tubes from OD mm. 10 x ID mm. 4 up to OD mm. 165 x ID mm. 150
- moulded tubes from OD mm. 40 x ID mm. 15 up to OD mm. 1815 x ID mm. 1640
- moulded sheets 600x600 - 1000x1000 - 1500x1500 - 1000x2000 from mm. 3,0 up to mm. 100 thick
- skived sheets and tapes from thickness mm. 0,025 up to mm. 5, width up to mm. 1.500



The main application fields and the finished products mostly supplied in the various G series grade.

Application Fields	Products
Chemical and petrochemical industry	Tank lining, valve seats, valve and pumps linings
Mechanical Industry	Sealing elements, standard and special bearings, sliding parts
Food industry	Sealing elements, bearings, special parts
Building Industry	Dimpled sheets, sliding and bearing pads and disks for thermal expansion of industrial and civil buildings.

GUARNIFLON GROUP



ADMINISTRATION
OFFICES



Maceplast
GmbH
Germany



Maceplast
UK Ltd.
UK



Maceplast
France S.A.
France



Maceplast
Romania S.A.
Romania



Maceplast
España S.L.
Spain



IPM
Industrial Plastics
and Machine Inc.
U.S.A.



Guarniflon India
PVT. LTD.
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UNI EN ISO 9001:2008



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