THE ITALIAN HEAD QUARTERS

COMPANY PROFILE

40 years of activities with fluoropolymer products rewarded Guarniflon® S.p.A as one of the worldwide leading players for a wide range of industrial applications. 10.000 tons of fluoropolymer materials processed per year and the international subsidiaries network are the seal of the experience and reputation developed in the decades, processing and supplying high quality fluorobased products also for the mobility segment.
PTFE and other fluorinated materials are the most popular demanded grades for automotive machined components, offering a unique combination of thermal, chemical, electrical and mechanical properties still unmatched.

PRODUCT SUPPLY CHAIN AND QUALITY MANAGEMENT

Guarniflon® S.p.A approach to the automotive field fully complies with IATF 16949:2016 norms, granting the expected high quality standard for all mobility applications, from raw material compounding process to the final quality control of the machined components performed by sophisticated visual inspection machines.

THE FUTURE OF MOBILITY ELECTRIC SOLUTIONS

Much of the technology of electric vehicles depends on high efficiency and a good strength to weight ratio. In such an endeavour, lightweight materials become essential. Polymers have long been recognized to provide long term performance and efficiency gains to any system. PTFE and other polymer components have a bright future for electric vehicles, used mainly for sensor shields and enclosures, brackets, insulation, EV charging stations and batteries.

FACT SHEET

- Provide for 13.8mil jobs in EU
- Automotive represents over 7% of EU GDP
- Largest private investor in R&D
- Fluoropolymer enable lower emission, protection against heat, vibration, aggressive fluids prolonging vehicle useful life & safety
- Over €40mil/yr fuel savings
- Health damage prevention of further €100mil/yr through lower emissions
- 1/3 of 30.000 vehicle parts are made of plastics
- 39 different plastic/polymers in a vehicle

WHY FLUOROBASED MATERIALS ARE THE MOST PREFERRED ONES FOR AUTOMOTIVE APPLICATIONS

DECREASE FUEL EMISSION	IMPROVE COMPONENTS LIFETIME	IMPROVE CAR PERFORMANCE
OFFER SUPERIOR CONFORT/NOISE CONTROL	IMPROVED SAFETY PERFORMANCE	CLEANER ENVIRONMENT

GUARNIFLON® NETWORK

THE EUROPEAN NETWORK

ITALY HEAD QUARTERS
FRANCE
GERMANY
ROMANIA
SPAIN
UNITED KINGDOM

THE OVERSEAS COMPANIES

CANADA
INDIA
P.R. OF CHINA
U.S.A.

VENDITE ITALIA
vendite@guarniflon.com
Fax +39.035.4425191

INTERNATIONAL SALES
sales@guarniflon.com
Fax +39.035.4425238

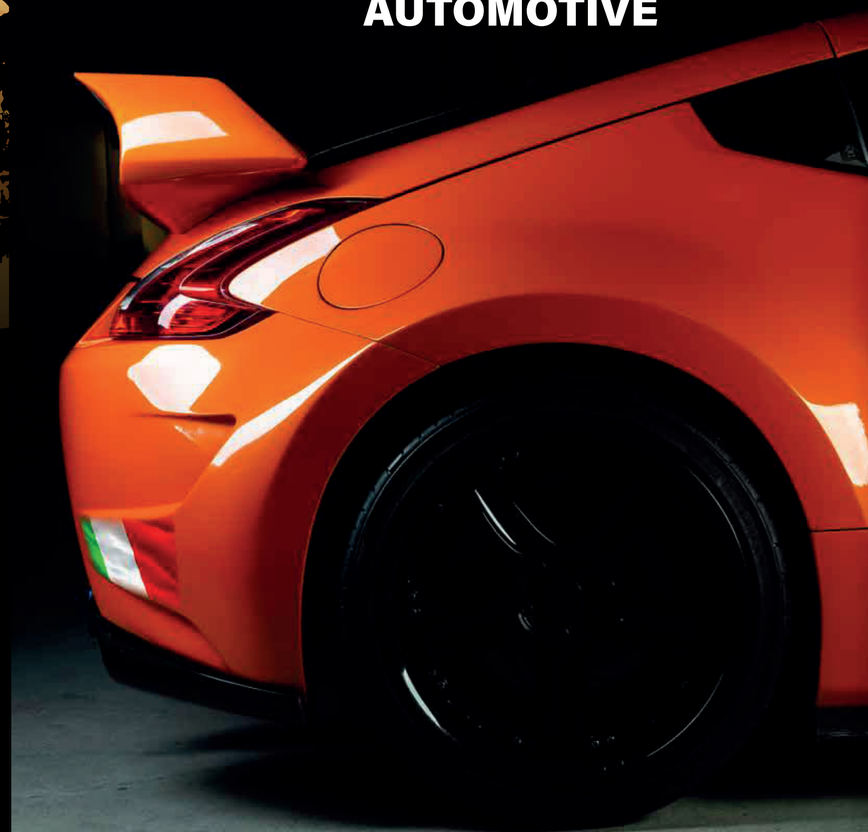
GUARNIFLON®

Via T. Tasso, 12
24060 - Tagliuno di Castelli Calepio
Bergamo - Italy
Tel. +39.035.4494311
Fax +39.035.4494336
info@guarniflon.com
www.guarniflon.com
GPS: N45°38.2605, E009°53.5665

kiwa certified
CERTIFIED MANAGEMENT SYSTEM
IATF NO. 0424827
IATF 16949 : 2016

GUARNIFLON®

FLUOROPOLYMER ENGINEERED COMPONENTS FOR AUTOMOTIVE



A SHOCK ABSORBERS

Long lasting, noise control system and sliding properties are the main advantages expected from PTFE and fluoropolymer materials used as components in shock absorbers. Special PTFE compounded grades can be the proper solutions for such application, tested for hundreds of thousand cycles before being homologated and set into regular production.

B AIR CONDITIONING SYSTEMS

Sealing properties and thermal stability at different temperatures are the key factors for air conditioning fluoropolymer components, where the selected fillers used in the compounds play a strategical role to avoid the seal expansion or shrinking.

C STEERING SYSTEMS

Self-lubricating PTFE guides and bushings engineered to meet the safety requirements of this critical system. The dry working conditions of some parts of the steering systems force to use high performance fluorobased materials like PTFE (virgin or compounded).

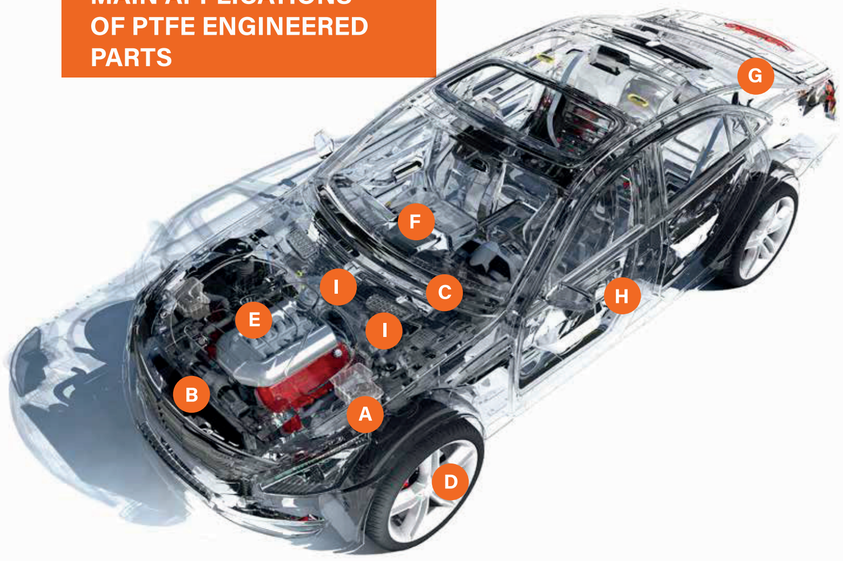
D BRAKE SYSTEMS

Compounded PTFE engineered components are the most often used parts in brake systems expected to offer the best performances in terms of safety and lifetime.
Compounded PTFE used in these applications offer the best heat dissipation, an excellent wear resistance, media resistance without interfering with the counter-surfaces.
Not only callipers PTFE components but also engineered PTFE materials used in train air compressors have been studied, developed and homologated by Guarniflon Technical Dept.

E ENGINES – INJECTION SYSTEMS

Seals and components used in engines and injection systems are often in contact with aggressive elements, high temperatures and high pressures. Just few selected fluorobased materials compounded with special fillers can stand such critical environment and granting long lifetime.

MAIN APPLICATIONS OF PTFE ENGINEERED PARTS



F INTERIOR BUSHINGS

The noise reduction in car interiors is an inalienable subject for modern vehicles, where the properties of PTFE components can offer successful solutions when plastic or metal parts are in contact between them. To enhance the sliding properties of these bushings, virgin PTFE is often compounded with special organic fillers.

G GAS SPRINGS

A gas spring is a type of spring that, unlike a typical mechanical spring that relies on elastic deformation, uses compressed gas contained within an enclosed cylinder sealed by a sliding piston. Many different materials can be used to seal the system, fluorobased materials offer the best performance and grant the longest lifetime. Quite often the PTFE seal plays an important role as anti-extrusion components to protect the elastomeric rings.

H PTFE FILMS FOR BATTERIES

The following properties of PTFE have made it the perfect material to be used as internal insulating components in the massive production of lithium-ion batteries for the electric mobility:
High dielectric breakdown voltage;
Chemically inertness and high temperature resistance;
Zero-static discharge – PTFE does not allow any current to pass through or along its surface.

I VISCOUS VIBRATION DAMPERS AND TRANSMISSIONS

PTFE bearings are largely used in viscous dampers for their properties such as low friction and heat & aggressive media resistance. The PTFE components are often coupled with other metal and plastic parts to get the final dampers and exposed to aggressive media environment. For heavy-duty applications, PTFE shaft seals and other types of components must be made by PTFE strongly filled materials quite often coupled with metal parts. By combining the sliding properties of PTFE and the high percentages of properly selected fillers, Guarniflon® is able to offer compounded PTFE grades specifically focused on heavy-duty applications.