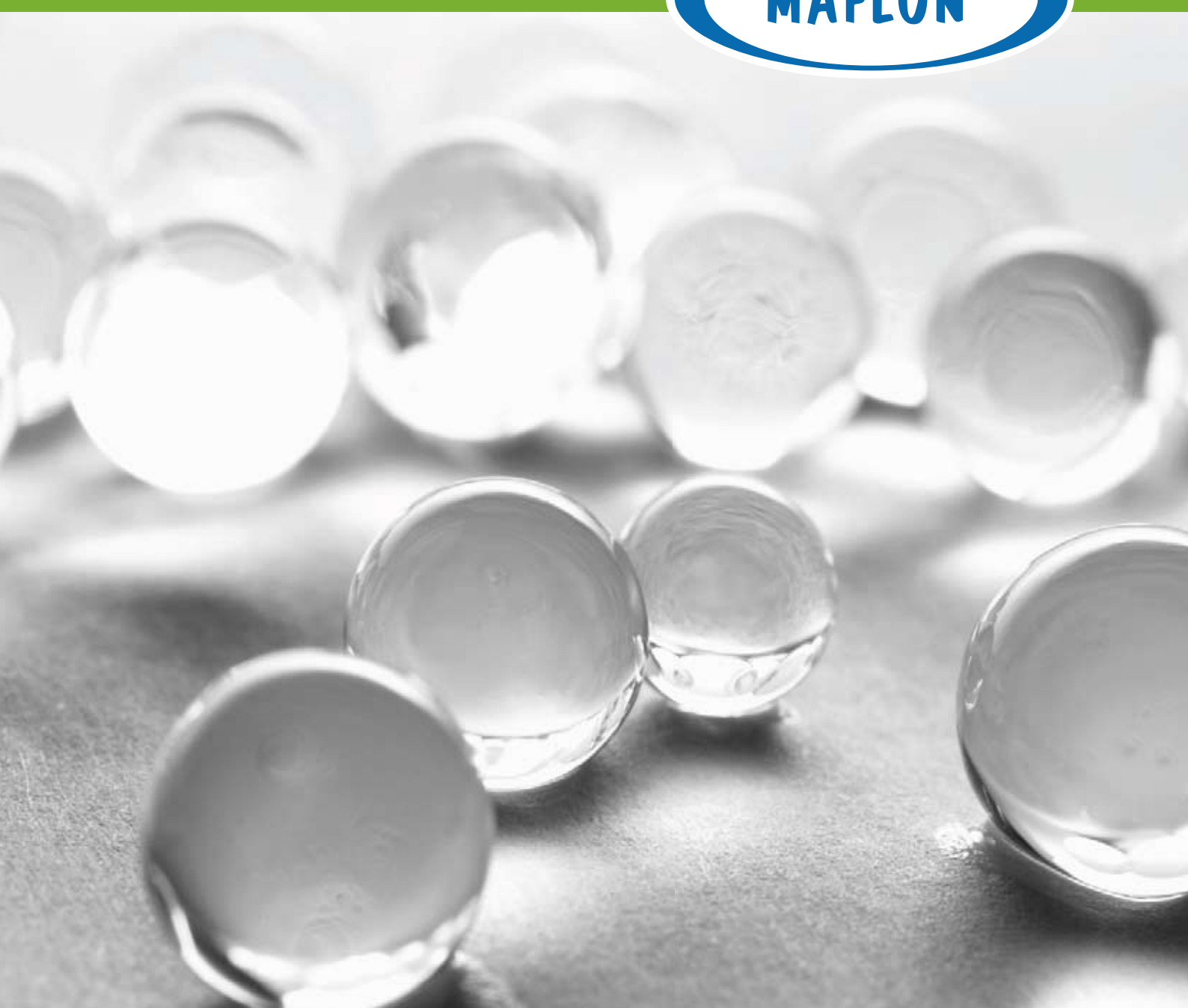


THE FLUOROCHEMICALS SPECIALIST



MAFLON[®]





THE FLUORO-CHEMICALS SPECIALIST

Maflon® was founded in 1989, from the very beginning specialising in the process and production of PTFE compounds.

A research project born to focus on fluorinated products that has steadily grown in stature, developing a solid foundation, whilst at the same time gaining a wealth of knowledge and expertise in this field.

From 2009 Maflon® was incorporated in Guarniflon® S.p.A., becoming the fluorochemical specialties business unit of the group and focused on special and high-tech fluorinated products for surfaces protection.

Doesn't matter if we're talking about leather or textile, stones, marble, granite or wood surfaces, Maflon® always has the right solution which provides the surfaces with a durable and transparent treatment while creating a high effective protective barrier against different oils, water, coffee, food products and beverages.

Maflon® fluorosurfactants impart excellent wetting, spreading and levelling properties in a variety of coating systems including cleaners and waxes, polishes, inks, adhesives, polymer technology and high solid coatings.

R&d and production activities are managed in the headquarters located in the north of Italy, joining quality and safe processes with care and prevention of the environment.

Today Maflon® has a research team leading the R&D activities, cooperating closely with 3 of the most important Universities in this sector.



CHEMISTRY

Maflon® scientific research is based on the chemical study of fluoro telomers, perfluoroalkyl iodides, obtained by a controlled polymerisation of the tetrafluoroethylene. Researches in Maflon®'s laboratory use these molecules inorganic synthesis for the preparation of fluorinated materials and compounds of the type $F(CF_2)_n(CH_2)_mX$, where X can be different functional groups such as alcohols, glycols, olefins, (meth)acrylics, epoxydes, silanes.

These new chemical intermediates are the raw materials for the production of more complex fluorinated products used in several applications:

- polymers of different structure such as poly(meth)acrylates, polyurethanes, polysiloxane for surface treatment in order to improve oleo and hydro repellency;
- fluorosurfactants used as wetting, levelling agents for floor polish, wax formulation, paint and coating;
- perfluoroalkane $CF_3(CF_2)_nCF_3$ used as solid lubricants;
- diblocks or semiperfluoroalkanes with the structure $CF_3(CF_2)_n(CH_2)_mCH_3$ used as solid lubricants or fluorinated solvents with a high solubility for oxygen and carbon dioxide.

The above products are characterized and tested in Maflon® internal laboratory thanks to the following technical instruments:

- Infrared spectroscopy (IR)
- Differential scanning calorimetry (DSC)
- Gel permeation chromatography (GPC)
- Gas chromatography (GC) and gas chromatography – mass spectrometry (GC-MS)
- QUV weathering tester
- Abrasion tester
- Tensiometer for surface and interfacial tension measurements

In brief, technical performances connected with the chemical structure, under a special attention to deal with environmental friendly products.

HIGH PERFORMANCES IN FLUOROCHEMICALS

Maflon® products can meet a wide range of applications and have been divided into different specific business lines, always offering tailor-made solutions to the customers and remaining one step ahead of the competition.

The main characteristics of Maflon® products are predominantly due to the C-F (carbon-fluorine) chemical bonds they contain. That's the reason why the molecules are very stable and can be used in a wide range of applications.

A special mention to Lineplus PF, a micronized PTFE additive designed to enhance the wear resistance, (chemical, UV and corrosion resistance), lubricity and non-stick properties of a variety of materials: printing inks, paint and coatings, thermoplastic, grease and lubricants, plastics and elastomers.

Also offering excellent performance for applications on textile and leather materials, where Maflon® products can be applied without altering the aspect and the touch sensation of treated substrate.

The latest addition to the Maflon® range is the new brand Hexafor that is rapidly growing in reputation thanks to its technical performances connected with the chemical structure, high performance short chain fluoropolymers and fluorosurfactants.

Below is a brief list of product categories:

- | | |
|--|-----------------------------|
| • non-ionic fluorinated surfactants | • fluorinated siloxanes |
| • anionic fluorinated surfactants | • fluorinated silicones |
| • perfluoroalkanes | • fluorinated polyurethanes |
| • semifluorinated alkanes | • fluorinated intermediates |
| • fluorinated polyacrylates/metacrylates | |



MAFLON R&D

Maflon® R&D department is constantly involved with the development of new fluorinated materials to find innovative and customized solutions for different applications. That target can be reached thanks to the availability of a devoted engineers and chemists team, following projects from the research step up to the industrialization phases.

MAFLON QUALITY MANAGEMENT

The quality assurance and quality control procedures - in terms of equipment operations and maintenance - and all procedures as well as analytical methods (on raw materials and finished products control), are made according to international standard (AATCC standard, ASTM standard, DIN standard) or to customers' required standard.

All the above is possible thanks to the availability of an extremely well equipped laboratory, fitted with the most updated technologies and instruments. Last but not least the regular training of Maflon® operators, performing specific processes in accordance with customer or industrial standard.

CUSTOMERS' SERVICE

Synergies between R&D, sales and production departments allow Maflon® to give fast and problem-solving solutions to its customers: skilled and international oriented back ground managers will always be at the customer's disposal for suggestions and solutions to enhance and strengthen the cooperation.

TECHNICAL & STRATEGIC PARTNERSHIPS

Maflon boasts some close technical cooperation with the Fluorine Chemistry Laboratory of 3 of the most important Italian Universities and other external laboratories, where the latest technologies for the characterization of the different products are used:

- Nuclear magnetic resonance (NMR)
- Scanning electron microscopy (SEM)
- Termogravimetry (TG)
- High pressure liquid chromatography (HPLC)
- Matrix Assisted Laser Desorption Ionization (MALDI)
- Elemental analysis
- Atomic absorption spectroscopy





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