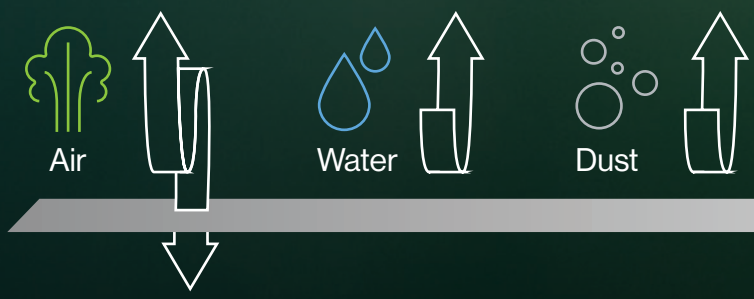
TEKPORE®
Porous sPTFE



YOUR CHOICE FOR FLUOROBASED PRODUCTS

GUARNIFLON®

TEKPORE®
Porous sPTFE
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

TEKPORE® Porous sPTFE

Technology and Performance by Guarniflon

Guarniflon®'s porous sPTFE represents the evolution of fluoropolymer materials, specifically designed for applications requiring high chemical resistance combined with controlled permeability. Thanks to an exclusive manufacturing process, the material features a uniform and stable microstructure, ensuring consistent and reliable properties over time.

Lightweight, inert, and resistant to atmospheric agents, porous sPTFE is ideal for filter membranes, venting elements, fluid diffusion supports, and insulating components, even in demanding environments. **Guarniflon®**'s experience and know-how ensure quality, customization, and technical support for every application need.

A Unique Integrated Processing Chain

Thanks to the raw material compounding unit Flontech, **Guarniflon®** is able to control and internally process all kinds of raw material PTFE compounds, studied and developed with the R&D department.

Guarniflon® R&D
Research
→ Materials engineering

Flontech
Fluoropolymer raw materials compounder
→ Materials compounding

Guarniflon®
PTFE semifinished and machined products
→ Materials processing

TEKPORE® Properties

TEKPORE® Porous sPTFE grades are produced from suspension PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity. Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, **Guarniflon®** has developed different grades of porous sPTFE with different properties.

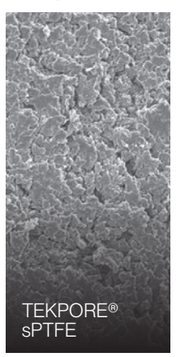
Main Properties

- **Air flow rate** Up to 170 l/hr/cm² at 70 mBar
- **Water intrusion pressure (WIP)** Up to 30 mBar
- **Pore size diameter** Up to 50 µm
- **Density** 1.4 – 2.0 g/cm³
- **Melting point** 330 °C
- **Thermal stability range** –270 °C to +260 °C
- **Useful mechanical strength** At low and high temp.
- **Insolubility**
- **Exceptional chemical inertness**
- **Coefficient of friction** Extremely low
- **Dielectric constant / dissipation factor** 2.1
- **Hydrophobicity and oleophobicity**
- **Weatherability and UV stability** LOI > 95 %
- **Flame resistance** UL 94 V-0 classification
- **Purity, color** White – Refractive index 1.38

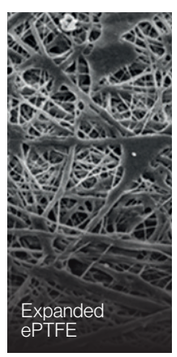
Driving Forces

- Physiological safety
- FDA 21 CFR 177.1550 and EU 10/2011 compliance
- Steam and ETO sterilization compatibility
- PFOA-free composition
- Excellent machinability
- Miniaturization suitability
- Low maintenance and high reliability
- Extended service life
- IP67 protection rating
- Thermal and ultrasonic weldability

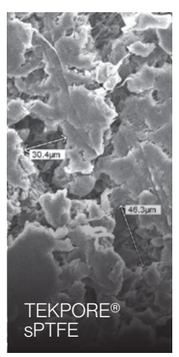
Comparisons SEM Pictures



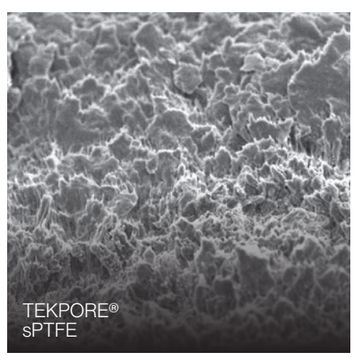
High Macro



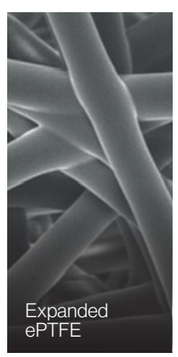
High Macro



Low Macro



TEKPORE® Section



Low Macro

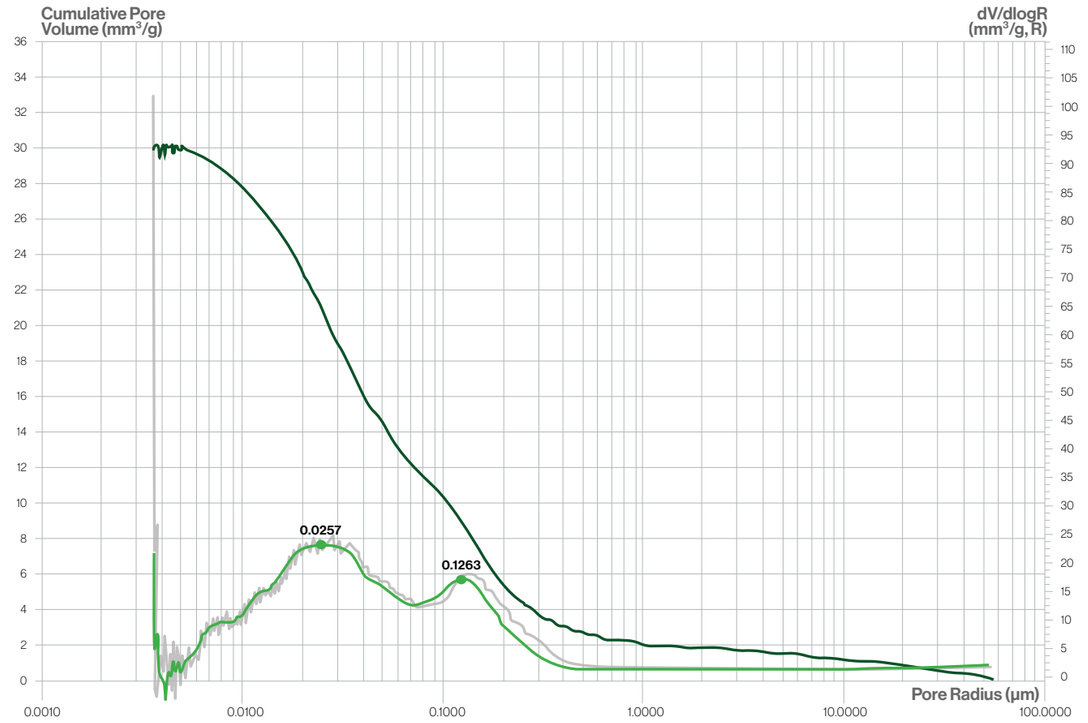
sPTFE vs ePTFE

• = YES • = NO ID = Insufficient Data NA = Not Available

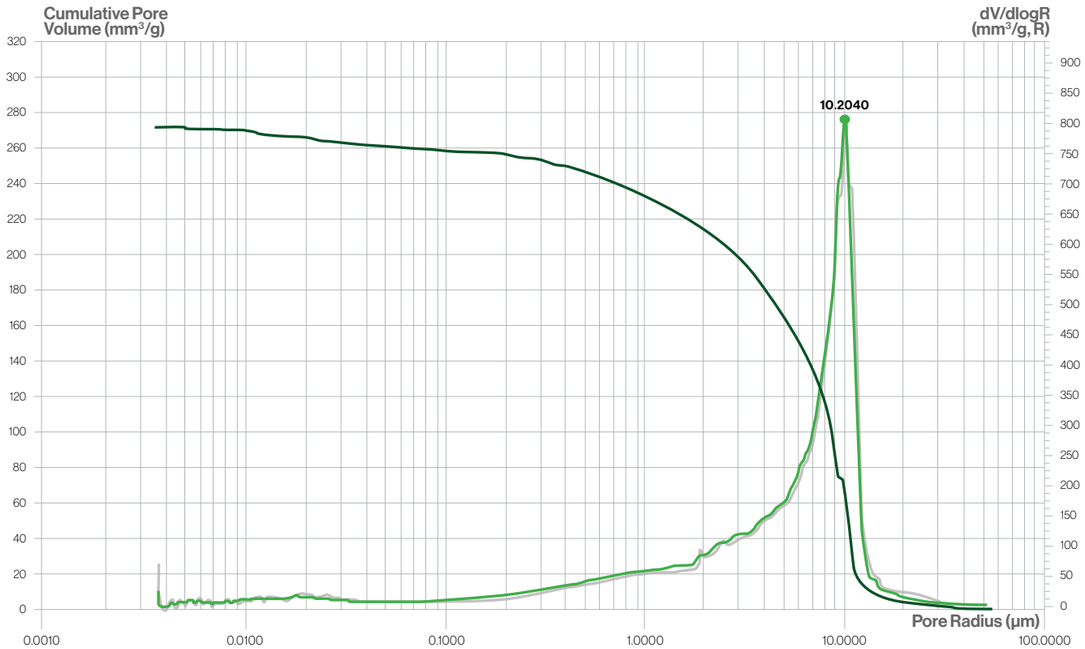
Features	TEKPORE® sPTFE	Expanded ePTFE
Naturally hydrophobic (IP rated)	•	•
Sintered porous structure	•	ID
High temperature (>250°C)	•	•
High tensile strength in all directions	•	•
Precise porosity and thickness control	•	NA
High UV and outdoor weather resistance (UL746C)	•	•
Meets UL 94 flammability (V0)	•	ID
High open area (>80%)	•	•
Sec. oleophobic treatment meets AATCC grade 8	•	NA
Water naturally runs off surface	•	ID

Benefits	TEKPORE® sPTFE	Expanded ePTFE
Low flex fatigue	•	•
Omni-directional	•	•
Heat welding	•	•
Vibrational welding	•	•
Can apply physical pressure to membrane	•	ID
Can plate metallic or other secondary layers	•	ID
Low sound blocking	ID	•
Mounting inside or outside of enclosure	•	•

Pore Size Distribution
dV/dlogR (mm³/g, R) – FLON 8806



Pore Size Distribution
dV/dlogR (mm³/g, R) – FLON 8826



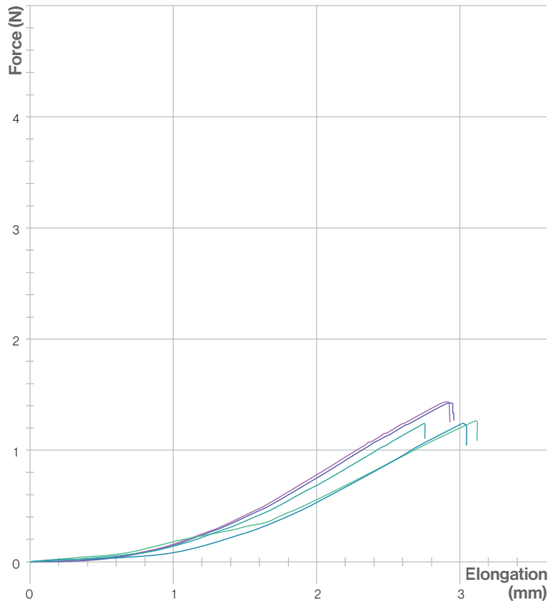
Puncture Test*

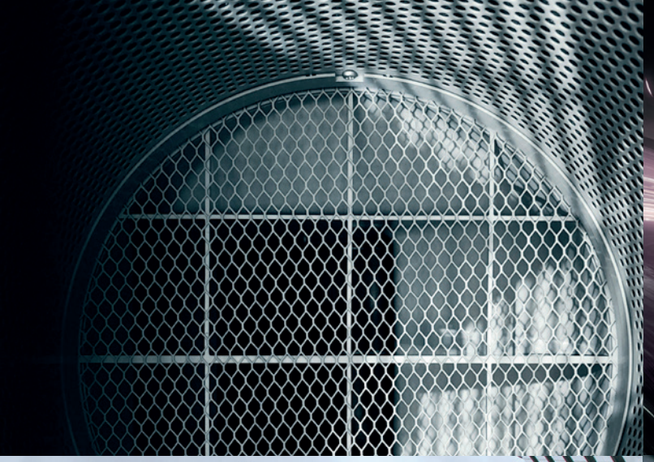
The following data describes one of the key factors to evaluate the resistance to mechanical penetration of porous sPTFE components (e.g. vents) used in electric batteries and automotive applications in general.

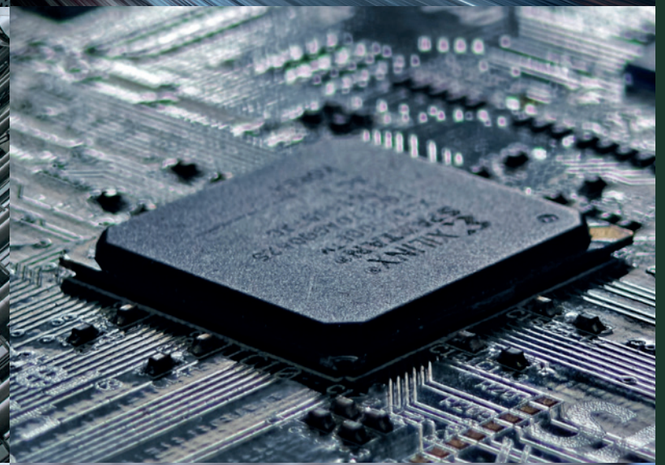
Battery and Sensor System Designers

	Unit	TEKPORE TPF8806	TEKPORE TPF8808	TEKPORE TPF8801	TEKPORE TPF8822	TEKPORE TPF8826	Developmental grade 1	Developmental grade 2
Force								
Film thickness 0.10 mm	N	4.0	5.2	2.7	2.5	< 0.2	1.6	1.3
Film thickness 0.25 mm	N	-	6.6	3.8	-	-	-	-
Elongation at Break								
Film thickness 0.10 mm	mm	2.7	3.1	2.8	3.1	< 2	3.1	2.9
Film thickness 0.25 mm	mm	-	3.3	2.8	-	-	-	-

* Standard EN 1447 describes a test method for determining the puncture resistance. The equipment records the force (in N) and elongation (in mm) required to penetrate the sample until it breaks.



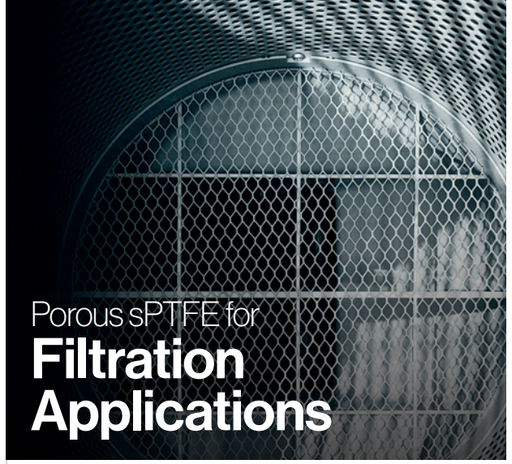




Applications

Industry / Sector	Typical Application	Main Benefits of Porous sPTFE
Filtration / Safety Technologies	Gas/liquid filter membranes, dust filters, silencers, protective housings for sensors, dust filters	High chemical resistance Controlled permeability up to 170 l/hr/cm² - 70 mBar Pore size diameter ~50 µm Water-resistance
Automotive	Vents, valves, ABS components, airbags, tire pressure systems, protection of onboard electronics, headlights, hooters, injection control, batteries	Lightweight Resistance to high and low temperatures Inertness to aggressive fluids Low friction Long-lasting & low maintenance
Optics / Metrology / Chromatography	Reflectors, spectrometers, photometers, integrating spheres, optical elements / diaphragms, Ulbritcht spheres	Uniform microstructure for optical stability → (Lambertian emitter) Chemical resistance High-precision performance
Chemical / Semiconductor / Clean Room	Gas/liquid filtration in chemical processes, clean rooms, catalyst diaphragms, gas injection/distribution elements, pressure compensation devices	Aggressive chemicals resistance Thermal stability Non-contaminating nature Controllable porosity Water intrusion pressure (WIP) up to 30 mBar
Electronics / Insulation	Protective components for sensors, condensation protection, electrical insulation, vents for sealed parts	Excellent dielectric properties Inertness Moisture prevention Durability Structural integrity at extreme temperatures
Food / Pharmaceutical	Components for food processing equipment, beverage systems, applications requiring purity and non-toxicity	Non-toxicity Regulatory compliance Cleanability Sanitization resistance Non-interaction with food and pharmaceuticals
Aerospace	Films, tapes, release liners, masking elements, protective layers requiring low weight and thermal resistance	Excellent thermal excursions resistance Lightweight UV and chemical resistance Extreme conditions reliability



Porous sPTFE for Filtration Applications

Filtration is a core industrial process used to separate solids from liquids or gases, ensuring purity, product safety, and process reliability. It's widely used in chemical, pharmaceutical, food, and environmental industries.

Role of Porous sPTFE

- Membranes and filter discs for gas or liquid filtration;
- Vent filters to allow air passage while blocking liquids and solid particles;
- Protective barriers for sensitive sensors and instruments;
- Filter media supports in critical and aggressive environments.

Key advantages

Complete chemical inertness
Resistant to aggressive solvents and corrosive media.

Controlled porosity and permeability
Predictable, stable flow rates.

Hydrophobic surface
Blocks water while allowing air/gas to pass.

Thermal and mechanical resistance
Maintains integrity under pressure and temperature variations.

Non-shedding and clean
Ensures high product purity and no contamination.

Why choose Guarniflon®

- Proprietary TEKPORE® Porous sPTFE technology;
- Tailored porosity, pore size (down to ~50 µm), and thickness;
- Certified and fully traceable production batches;
- Custom shapes and components available;
- Technical support for integration into industrial filtration systems.

Ideal for:

- Industrial filter manufacturers
- Chemical and pharmaceutical plants
- Food & beverage systems
- Gas/Liquid purification systems

Porous sPTFE for Automotive Applications

The automotive industry demands materials that can withstand extreme temperatures, pressure variations, vibrations, and exposure to aggressive fluids, while maintaining long-term reliability and minimal maintenance.

Role of Porous sPTFE

- Venting elements for sealed electronic housings (ECUs, sensors, batteries);
- Pressure compensation membranes for lighting systems, ABS, and airbag units;
- Fluid barriers and protective filters for onboard electronics;
- Porous spacers and seals with combined insulation and breathability functions.

Key advantages

Thermal and chemical resistance
Withstands oils, fuels, solvents, and temperature extremes.

Controlled porosity and air permeability
Reliable pressure equalization.

Hydrophobic & oleophobic and weather-resistant
Prevents condensation, moisture and oils ingress.

Durable and low-friction
Long service life, no maintenance.

Lightweight and non-ageing
Improves efficiency and long-term stability.

Why choose Guarniflon®

- Specialized TEKPORE® Porous sPTFE technology;
- Customizable shapes, thicknesses, and pore structures;
- Certified and traceable production batches;
- Solutions for critical safety systems;
- Expert technical support for design and integration in automotive components.

Ideal for:

- Automotive component manufacturers
- Tier 1 suppliers
- Electronics module producers
- Battery and sensor system designers

Porous sPTFE for Chemical, Semiconductor & Clean Room Applications

Chemical processing, semiconductor fabrication, and clean room operations require exceptionally pure, inert, and stable materials to ensure product integrity, process safety, and contamination control.

Role of Porous sPTFE

- Gas and liquid filtration membranes for ultra-pure processes;
- Diffusion elements and diaphragms in chemical reactors;
- Pressure-equalizing vents in clean room equipment;
- Protective barriers for sensitive sensors and measuring devices.

Key advantages

Complete chemical inertness
Compatible with aggressive acids, bases, and solvents.

Controlled and stable porosity
Reliable flow and diffusion under precise conditions.

Non-contaminating, particle-free
Meets clean room and semiconductor standards.

High thermal and mechanical resistance
Withstands harsh processing environments.

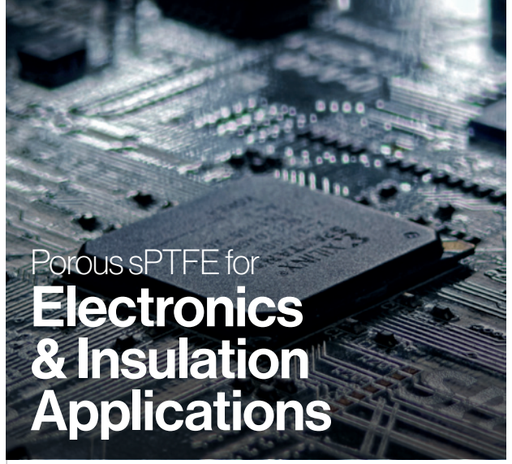
Hydrophobic and non-aging
Maintains properties over long operational cycles.

Why choose Guarniflon®

- Proprietary TEKPORE® Porous sPTFE technology;
- Production in clean environments with traceable batches;
- Precise control of pore size, thickness, and density;
- Custom components for semiconductor tools and chemical reactors;
- Expert support for clean room integration and compliance.

Ideal for:

- Semiconductor manufacturers
- Chemical processing plants
- Clean room equipment suppliers
- Ultra-pure fluid systems



Porous sPTFE for Electronics & Insulation Applications

Electronic systems require materials that offer high electrical insulation, protection from moisture and contaminants, and long-term stability, even under thermal cycling and harsh operating conditions.

Role of Porous sPTFE

- Breathable protective membranes for sealed electronic housings and sensors;
- Moisture and condensation barriers in sensitive components;
- Dielectric insulating spacers and gaskets with controlled breathability;
- Vent elements to equalize pressure while maintaining environmental protection.

Key advantages

Excellent dielectric properties
Safe insulation for sensitive circuits.

Hydrophobic and moisture-resistant
Prevents condensation and corrosion.

Chemically inert and non-aging
Long-term stability and reliability.

Thermal resistance and dimensional stability
Maintains integrity in temperature cycles.

Lightweight and easy to process
Facilitates integration into compact devices.

Why choose Guarniflon®

- Proprietary TEKPORE® Porous sPTFE technology;
- Custom designs for electronic housings and sensor systems;
- Precise control of thickness, pore size, and permeability;
- Certified and fully traceable production batches;
- Expert technical support for design and integration;

Ideal for:

- Electronics module producers
- Sensor producers
- PCB System designers
- Sealed device enclosures

Porous sPTFE for Optical Applications

Optical systems rely on the precise control, reflection, transmission and diffusion of light. Materials used in these environments must ensure high reflectance, low absorption and exceptional stability across the visible and infrared spectrum.

Role of Porous sPTFE

- Diffusing and reflecting elements in optical instruments;
- Ref. standards for reflectance and photometric calibration;
- Internal reflectors in LED, laser, sensor assemblies;
- Light management layers in photometric and imaging devices;
- Optical isolation and insulation components for harsh environments.

Key advantages

High diffuse reflectance (>95%)
Excellent light diffusion and uniform illumination.

Optical stability: refractive index (~1.35–1.38), low abs.
Uniform UV–NIR response, minimal color distortion.

Total chemical and UV resistance
No degradation or yellowing over time.

Thermal stability (–200 °C to +260 °C)
Reliable under extreme illumination or thermal cycling.

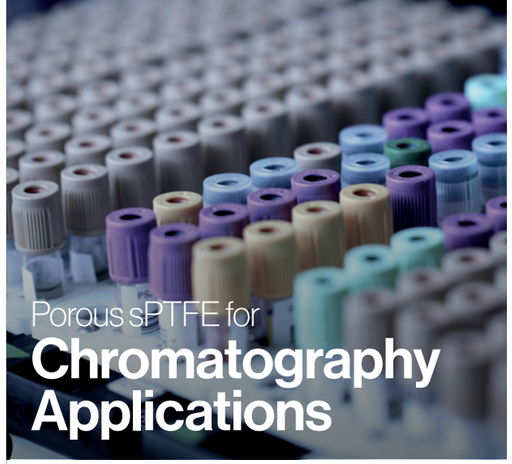
Hydrophobic and inert surface
Prevents contamination and optical scattering by moisture.

Why choose Guarniflon®

- Proprietary production process for Porous sPTFE;
- Controlled pore size and density for predictable performance;
- Ultra-clean manufacturing to prevent particulate contamination;
- Custom geometries and finishes available for integration;
- Technical support for photometric and optical design optimization.

Ideal for:

- Optical instrument manufacturers in res. lab.
- Photometric and colorimetric systems
- LED and laser device producers
- Calibration standard suppliers



Porous sPTFE for Chromatography Applications

Chromatography is an analytical and preparative technique used to separate, identify, and quantify the components of a mixture. It requires a controlled environment, high precision, and zero contamination.

Role of Porous sPTFE

- Gas/Liquid diffusing supports in chromatographic systems;
- Porous membranes and filters integrated in inlet/outlet flow paths;
- Porous discs and insulating spacers to ensure sample purity;
- Microfluidic components for accurate pressure and flow control.

Key advantages

Complete chemical inertness
No interaction with solvents or samples.

Controlled and stable porosity
Uniform and repeatable flow.

No contaminants or particle shedding
Maximum analytical purity.

Thermal and mechanical resistance
Reliability during long or high-temperature cycles.

Dielectric properties
Safe in precision electronic instruments.

Why choose Guarniflon®

- Dedicated production process for Porous sPTFE;
- Precise control of porosity, thickness, and density;
- Certified and fully traceable batches;
- Custom components available;
- Specialized technical support for integration into HPLC, GC, and LC-MS systems.

Ideal for:

- Analytical instrument manufacturers
- Research laboratories
- Pharmaceutical industry
- Advanced chemical industry

Porous sPTFE for Food & Pharmaceutical Applications

Food and pharmaceutical industries demand materials that are chemically inert, non-toxic, clean, and resistant to aggressive sterilization processes, while ensuring controlled air and moisture transfer.

Role of Porous sPTFE

- Sterile venting membranes for packaging, containers, and bioreactors;
- Filtration discs and sheets for liquids, air, and gases;
- Protective barriers against contamination in clean processing environments;
- Breathable seals and gaskets for equipment exposed to sterilization cycles.

Key advantages

Chemically inert and non-toxic
Compliant with FDA and food-contact regulations.

Biocompatible and non-shedding
Safe for pharmaceutical environments.

Hydrophobic and moisture resistant
Prevents contamination from humidity.

Resistant to sterilization (steam, ETO, chemicals)
Ensures product safety and durability.

High purity and clean processing
Avoids particle release or contamination.

Why choose Guarniflon®

- TEKPORE® Porous sPTFE technology with certified quality;
- Custom formats and properties tailored to application needs;
- Controlled porosity, thickness, and airflow rates;
- Cleanroom production capabilities;
- Full traceability and regulatory compliance documentation.

Ideal for:

- Food packaging
- Pharmaceutical equipment
- Medical containers
- Bioreactor systems and sterile filters

Porous sPTFE for Aerospace Applications

The aerospace industry requires lightweight, durable, and reliable materials that can withstand extreme temperatures, pressure variations, vibration, and aggressive environments, ensuring long-term performance and safety.

Role of Porous sPTFE

- Pressure-equalizing vents for avionics housings, sensors, and electronic modules;
- Lightweight thermal and acoustic insulation layers;
- Moisture and contamination barriers for critical systems;
- Breathable gaskets and seals for pressurized or temperature-cycled environments.

Key advantages

Ultra-lightweight and low density
Reduces overall system weight.

Excellent thermal and chemical resistance
Stable in extreme operating conditions.

Hydrophobic and breathable
Prevents condensation and corrosion.

Superior dielectric properties
Protects sensitive electronics.

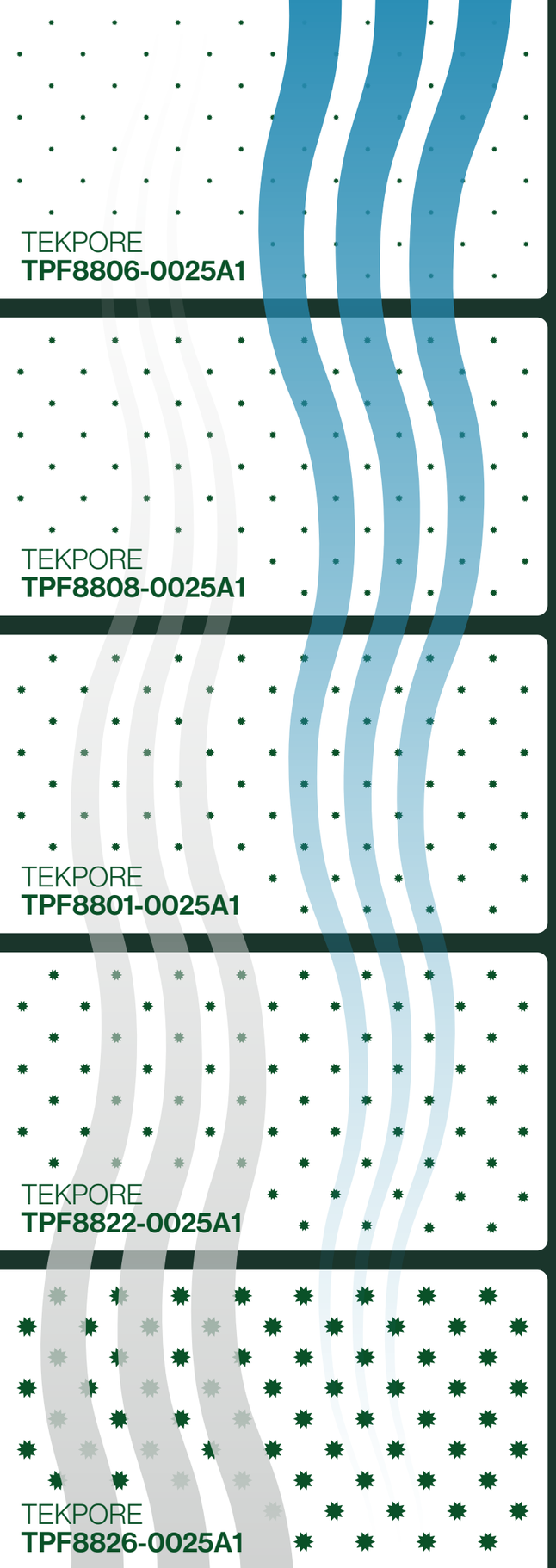
Mechanical stability and durability
Long-term reliability under stress.

Why choose Guarniflon®

- TEKPORE® technology engineered for aerospace needs;
- Custom solutions for sensors, electronics, cabin components;
- Tight control of thickness, porosity, and air permeability;
- Qualified production processes and full traceability;
- Experienced technical support for aerospace system integration.

Ideal for:

- Avionics manufacturers
- Aerospace electronics
- Sensor housings
- Lightweight insulation systems



Air Flow

Water Intrusion Pressure (WIP)

TEKPORE® Products Availability

Can be produced as molded tubes and rods, molded and skived sheets and films, machined components.

TEKPORE® Films & Membranes

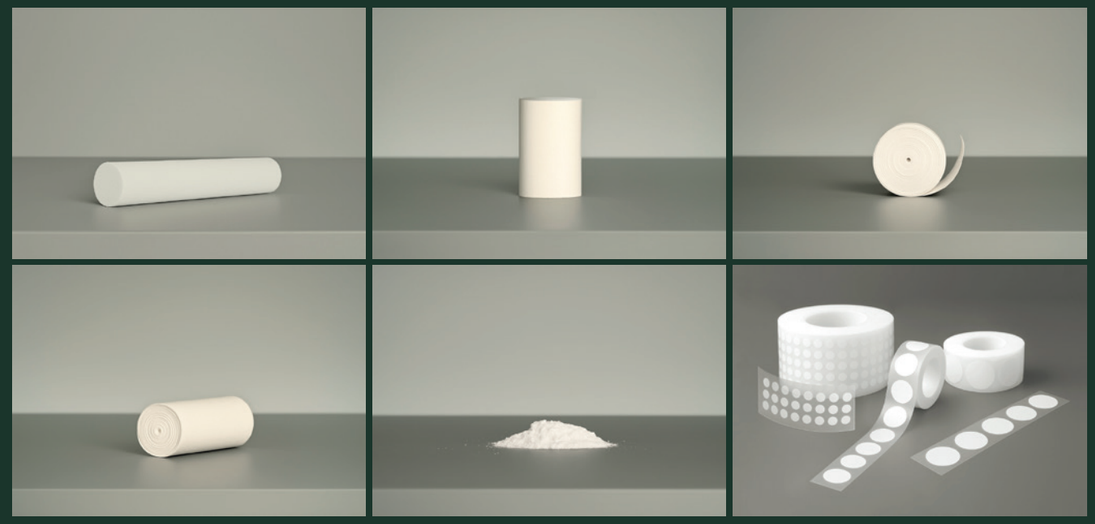
Available from 440 mm wide and thicknesses from 0.1 to 3 mm.

TEKPORE® Sheets

Available in 600x600, 1000x1000 and 1200x1200 mm formats and thicknesses from 3.5 up to 100 mm.

TEKPORE® Rods

Diameter up to 360 mm. Available with max 300 mm height, over dia 360 mm. Max height is 100-150 mm.

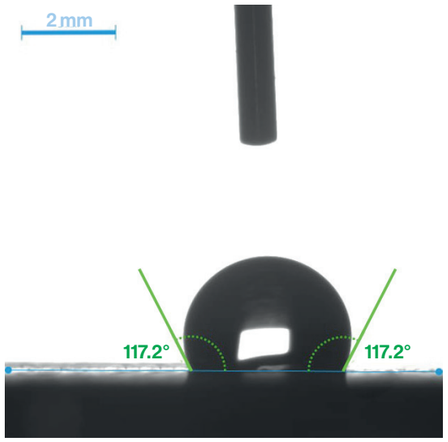


Main Typical Properties of Guarniflon® Porous sPTFE

	Method	Unit	TEKPORE TPF8806-0025A1	TEKPORE TPF8808-0025A1	TEKPORE TPF8801-0025A1	TEKPORE TPF8822-0025A1	TEKPORE TPF8826-0025A1
General							
Porosity degree	-	-	Very low porosity	Low porosity	Medium porosity	High porosity	Very high porosity
Physical & Mechanical							
Reference Thickness	Internal	mm	0.25	0.25	0.25	0.25	0.25
Colour	Internal	-	White/ Natural	White/ Natural	White/ Natural	White/ Natural	White/ Natural
Porosimetric							
Pore size	Internal	µm	< 1	1 – 3	6 – 8	8 – 10	15 - 20
Water intrusion pressure (P H_2O)	Internal *Specimen area 100cm²*	mBar	350	200	80	70	60
Air Flow (ΔP 10 mBar)	Internal *Specimen area 20cm²*	l/hr/cm²	0.04	0.7	7	15	27
Air Flow (ΔP 20 mBar)	Internal *Specimen area 20cm²*	l/hr/cm²	0.05	1.5	16	30	55
Air Flow (ΔP 70 mBar)	Internal *Specimen area 20cm²*	l/hr/cm²	0.13	5	55	110	185

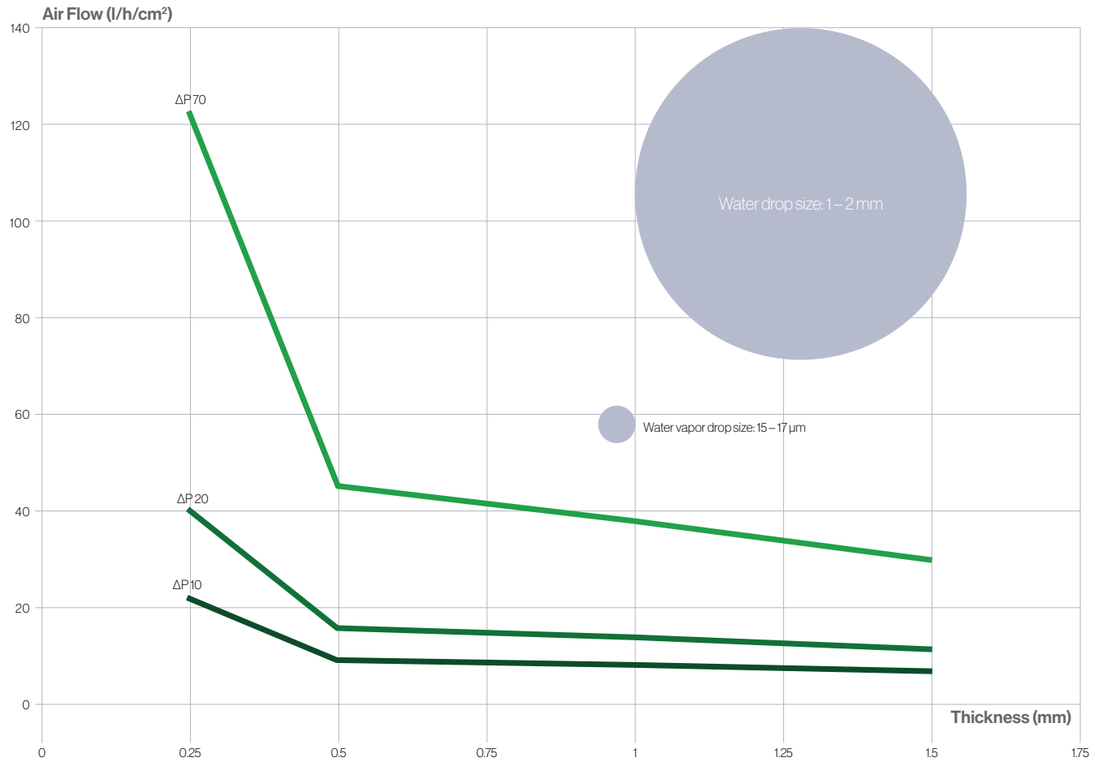
The characteristics shown in the table are influenced by the sample thickness and the production process. Therefore, the data provided are indicative and refer to samples with constant thickness, manufactured using the same production process.
Note: the data listed herein fall within the normal range 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.

Hydrophobicity and Oleophobicity



TPF8826-A1 Pore size 20 µm

The air flow of venting membranes decreases with thickness.
TEKPORE® Porous sPTFE repels water, oil, dust and grime, while water vapor droplets are allowed to pass through (perspiration).



TEKPORE
TPF8806–0025A1

Premium Quality Porous sPTFE

Guarniflon® **TEKPORE TPF8806-0025A1** is produced from PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity.

Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, Guarniflon® S.p.A. has developed porous sPTFE.

Main Applications

Filter and safety technology
- Filter membranes
- Protective sheeths
- Dust filters
- Protective elements for sensors
- Silencers
- Pressure balance system

Automotive engineering
- Abs
- Airbag
- Asr
- Batteries
- Injection control
- Esp
- Hooters
- Headlights

Optical metrology - Chromatography
- Reflectors
- Spectrometers
- Ulbricht spheres
- Photometers

Chemicals, semiconductor, clean room technology
- Filters for gases and liquids
- Catalyst supports-diaphragms
- Gas injection and/or gas distribution
- Engineering materials
- Pressure compensation devices

Driving Forces

- Chemically inert
- Physiologically harmless
- Thermally resistant from cryogenic up to 260°C
- Excellent dielectric properties
- Hydrophobic and oleophobic (optional)
- High degree of optical reflection (>98%)
- Steam an EtO sterilizable
- Low weight

Very Low Porosity

Water Intrusion Pressure
350 mBar

Pore Size
<1 µm

Typical Properties	Unit	Method	Data
Reference Thickness	mm	Internal	0.25
Colour	–	–	White / Natural
Typical Water Intrusion Pressure *	mBar	Internal	350
Typical Air flow (ΔP 10 mBar) **	l/hr/cm²	Internal	0.04
Typical Air flow (ΔP 20 mBar) **	l/hr/cm²	Internal	0.05
Typical Air flow (ΔP 70 mBar) **	l/hr/cm²	Internal	0.13
Pore size	µm	Internal	< 1

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.

* Water Intrusion Pressure values determined from a Ø11cm (100cm²) sample.
** Air flow values determined from a Ø5cm (20cm²) sample.

TEKPORE
TPF8808–0025A1

Premium Quality Porous sPTFE

Guarniflon® **TEKPORE TPF8806-0025A1** is produced from PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity.

Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, Guarniflon® S.p.A. has developed porous sPTFE.

Main Applications

Filter and safety technology
- Filter membranes
- Protective sheeths
- Dust filters
- Protective elements for sensors
- Silencers
- Pressure balance system

Automotive engineering
- Abs
- Airbag
- Asr
- Batteries
- Injection control
- Esp
- Hooters
- Headlights

Optical metrology - Chromatography
- Reflectors
- Spectrometers
- Ulbricht spheres
- Photometers

Chemicals, semiconductor, clean room technology
- Filters for gases and liquids
- Catalyst supports-diaphragms
- Gas injection and/or gas distribution
- Engineering materials
- Pressure compensation devices

Driving Forces

- Chemically inert
- Physiologically harmless
- Thermally resistant from cryogenic up to 260°C
- Excellent dielectric properties
- Hydrophobic and oleophobic (optional)
- High degree of optical reflection (>98%)
- Steam an EtO sterilizable
- Low weight

Low Porosity

Water Intrusion Pressure **200 mBar**

Pore Size **1-3 µm**

Typical Properties	Unit	Method	Data
Reference Thickness	mm	Internal	0.25
Colour	–	–	White / Natural
Typical Water Intrusion Pressure *	mBar	Internal	200
Typical Air flow (ΔP 10 mBar) **	l/hr/cm²	Internal	0.7
Typical Air flow (ΔP 20 mBar) **	l/hr/cm²	Internal	1.5
Typical Air flow (ΔP 70 mBar) **	l/hr/cm²	Internal	5
Pore size	µm	Internal	1 – 3

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.

* Water Intrusion Pressure values determined from a Ø11cm (100cm²) sample.
** Air flow values determined from a Ø5cm (20cm²) sample.

TEKPORE
TPF8801–0025A1

Premium Quality Porous sPTFE

Guarniflon® **TEKPORE TPF8806-0025A1** is produced from PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity.

Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, Guarniflon® S.p.A. has developed porous sPTFE.

Main Applications

Filter and safety technology
- Filter membranes
- Protective sheeths
- Dust filters
- Protective elements for sensors
- Silencers
- Pressure balance system

Automotive engineering
- Abs
- Airbag
- Asr
- Batteries
- Injection control
- Esp
- Hooters
- Headlights

Optical metrology - Chromatography
- Reflectors
- Spectrometers
- Ulbricht spheres
- Photometers

Chemicals, semiconductor, clean room technology
- Filters for gases and liquids
- Catalyst supports-diaphragms
- Gas injection and/or gas distribution
- Engineering materials
- Pressure compensation devices

Driving Forces

- Chemically inert
- Physiologically harmless
- Thermally resistant from cryogenic up to 260°C
- Excellent dielectric properties
- Hydrophobic and oleophobic (optional)
- High degree of optical reflection (>98%)
- Steam an EtO sterilizable
- Low weight

Medium Porosity

Water Intrusion Pressure **80 mBar**

Pore Size **6-8 µm**

Typical Properties	Unit	Method	Data
Reference Thickness	mm	Internal	0.25
Colour	–	–	White / Natural
Typical Water Intrusion Pressure *	mBar	Internal	80
Typical Air flow (ΔP 10 mBar) **	l/hr/cm²	Internal	7
Typical Air flow (ΔP 20 mBar) **	l/hr/cm²	Internal	16
Typical Air flow (ΔP 70 mBar) **	l/hr/cm²	Internal	55
Pore size	µm	Internal	6 – 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.

* Water Intrusion Pressure values determined from a Ø11cm (100cm²) sample.
** Air flow values determined from a Ø5cm (20cm²) sample.

TEKPORE TPF8822–0025A1

Premium Quality Porous sPTFE

Guarniflon® **TEKPORE TPF8806-0025A1** is produced from PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity.

Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, Guarniflon® S.p.A. has developed porous sPTFE.

Main Applications

Filter and safety technology
- Filter membranes
- Protective sheeths
- Dust filters
- Protective elements for sensors
- Silencers
- Pressure balance system

Automotive engineering
- Abs
- Airbag
- Asr
- Batteries
- Injection control
- Esp
- Hooters
- Headlights

Optical metrology - Chromatography
- Reflectors
- Spectrometers
- Ulbricht spheres
- Photometers

Chemicals, semiconductor, clean room technology
- Filters for gases and liquids
- Catalyst supports-diaphragms
- Gas injection and/or gas distribution
- Engineering materials
- Pressure compensation devices

Driving Forces

- Chemically inert
- Physiologically harmless
- Thermally resistant from cryogenic up to 260°C
- Excellent dielectric properties
- Hydrophobic and oleophobic (optional)
- High degree of optical reflection (>98%)
- Steam an EtO sterilizable
- Low weight

High Porosity

Water Intrusion Pressure
70 mBar

Pore Size
8-10 µm

Typical Properties	Unit	Method	Data
Reference Thickness	mm	Internal	0.25
Colour	–	–	White / Natural
Typical Water Intrusion Pressure *	mBar	Internal	70
Typical Air flow (ΔP 10 mBar) **	l/hr/cm²	Internal	15
Typical Air flow (ΔP 20 mBar) **	l/hr/cm²	Internal	30
Typical Air flow (ΔP 70 mBar) **	l/hr/cm²	Internal	110
Pore size	µm	Internal	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.

* Water Intrusion Pressure values determined from a Ø11cm (100cm²) sample.
** Air flow values determined from a Ø5cm (20cm²) sample.

TEKPORE TPF8826–0025A1

Premium Quality Porous sPTFE

Guarniflon® **TEKPORE TPF8806-0025A1** is produced from PTFE powders and specifically they are a mixture of different particle size distributions and hardness degrees to achieve the desired level of porosity.

Taking advantage of the up-to-date technologies and know-how used to process sintered PTFE products, Guarniflon® S.p.A. has developed porous sPTFE.

Main Applications

Filter and safety technology
- Filter membranes
- Protective sheeths
- Dust filters
- Protective elements for sensors
- Silencers
- Pressure balance system

Automotive engineering
- Abs
- Airbag
- Asr
- Batteries
- Injection control
- Esp
- Hooters
- Headlights

Optical metrology - Chromatography
- Reflectors
- Spectrometers
- Ulbricht spheres
- Photometers

Chemicals, semiconductor, clean room technology
- Filters for gases and liquids
- Catalyst supports-diaphragms
- Gas injection and/or gas distribution
- Engineering materials
- Pressure compensation devices

Driving Forces

- Chemically inert
- Physiologically harmless
- Thermally resistant from cryogenic up to 260°C
- Excellent dielectric properties
- Hydrophobic and oleophobic (optional)
- High degree of optical reflection (>98%)
- Steam an EtO sterilizable
- Low weight

Very High Porosity

Water Intrusion Pressure
60 mBar

Pore Size
15-20 µm

Typical Properties	Unit	Method	Data
Reference Thickness	mm	Internal	0.25
Colour	–	–	White / Natural
Typical Water Intrusion Pressure *	mBar	Internal	60
Typical Air flow (ΔP 10 mBar) **	l/hr/cm²	Internal	27
Typical Air flow (ΔP 20 mBar) **	l/hr/cm²	Internal	55
Typical Air flow (ΔP 70 mBar) **	l/hr/cm²	Internal	185
Pore size	µm	Internal	15 – 20

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.

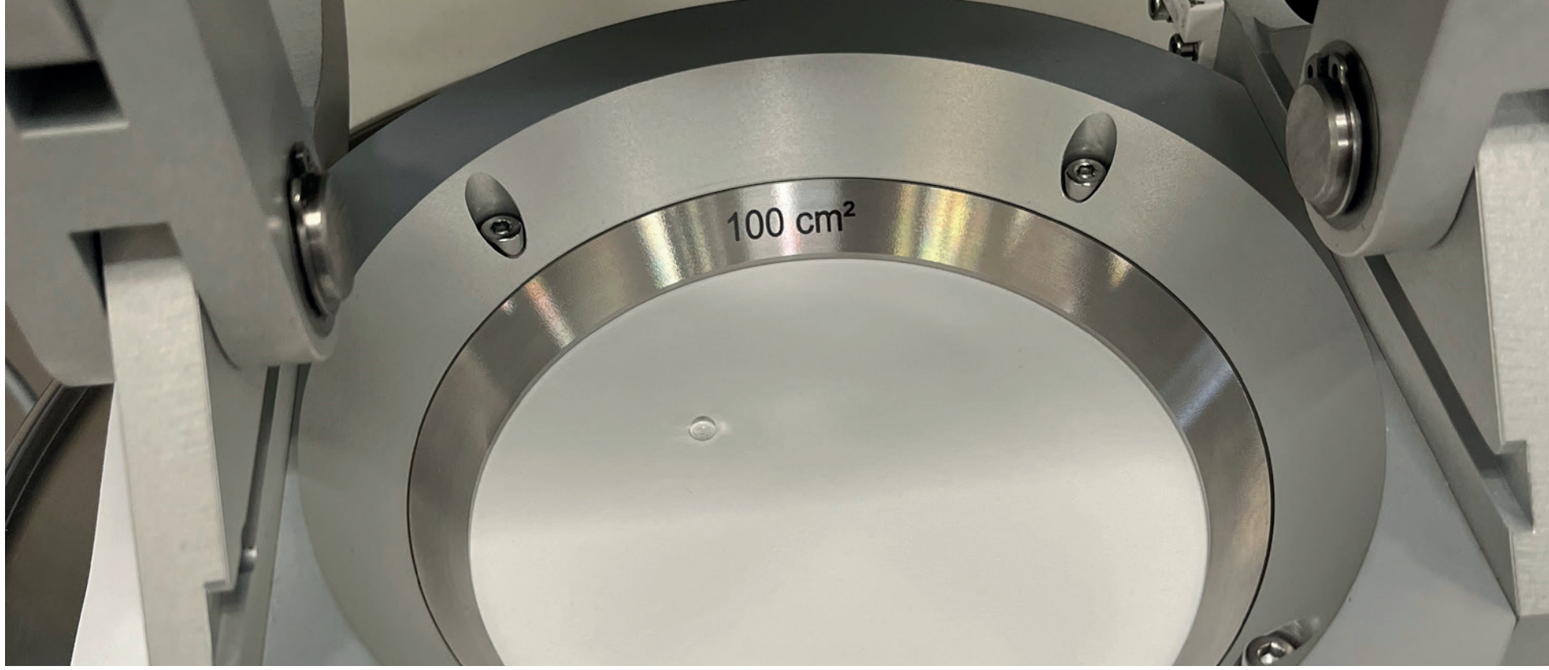
* Water Intrusion Pressure values determined from a Ø11cm (100cm²) sample.
** Air flow values determined from a Ø5cm (20cm²) sample.

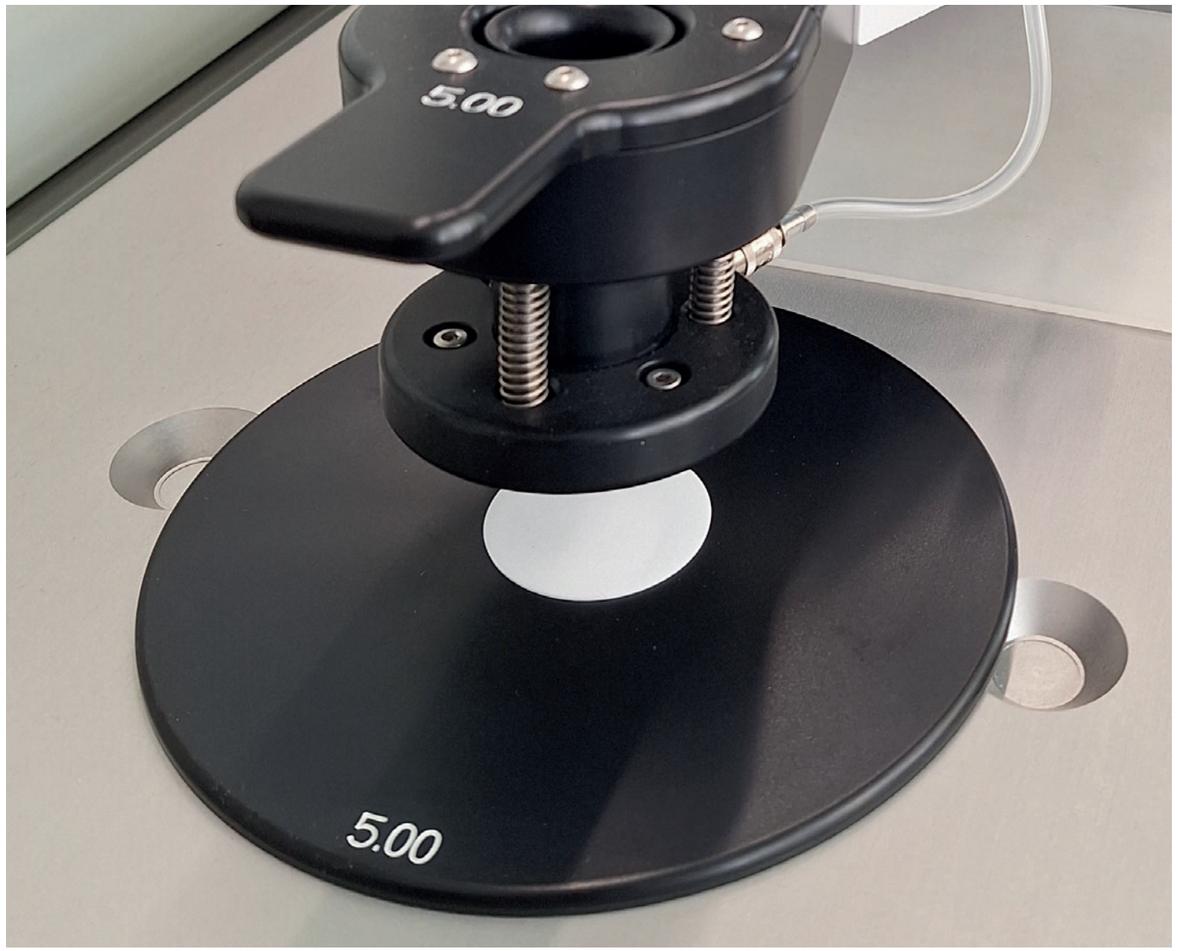
R&D Team
Quality Management

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.

UNI EN ISO 9001:2008





Lab Testing Equipments

Thermal and reological analysis
- TGA – Thermogravimetry (heat stability, filler content, degradation point);
- DSC – Differential scanning calorimetry (melting-crystallization point, glass transition, polymer molecular weight);
- MFR and MVR.

Powder properties analysis
- Bulk density;
- Tamped volume & tapped density;
- Dry and wet particle size analysis;
- Grindometer analysis (Hegman and NPIRI scale);
- Flowability;
- Specific surface area (Mercury porosimeter);
- Real density of Solids and Powders.

Physical & mechanical analysis
- Tensile strength, elongation at break and young modulus;
- Specific gravity;
- Rockwell hardness (ball hardness);
- Shore D hardness (needle hardness);
- Deformation under load;
- WIP – Water Intrusion Pressure;
- Air Flow measurement;
- Accessible and inaccessible porosity, average pore dimension;
- Wear properties (friction coefficient, PV limit, wear factor).

Electrical analysis
- Surface and volume resistivity (conductivity);
- Dieletric strength.

General analysis
- Color index (CIE L*a*b*);
- Moisture content;
- Hydrofluoric acid content;
- FT-IR spectroscopy;
- Gas chromatography;
- Microscopic analysis (stereomicroscopy, optical microscopy and SEM imaging);
- Contact angle measurement.

REVISIONE 2025 - REVISION 2025

Via T. Tasso, 12
24060 | Tagliuno di Castelli Calepio (BG), Italy
Tel. +39 035 4494311
info@guarniflon.com

www.guarniflon.com

Vendite Italia
vendite@guarniflon.com

International Sales
sales@guarniflon.com