

TRAKETCH® Microporous Filter Membranes

Allrounder for gas and liquid filtration in medical, sensitive electronics, cell culture and further applications

Conforms to FDA and EU

100% in-line quality control

Exactly defined pore size

Filter media with smooth surface

Hydrophilic, hydrophobic or oleophobic

USP Class VI bio compatibility

TRAKETCH® Membranes – Versatile applications

Microporous surface filters

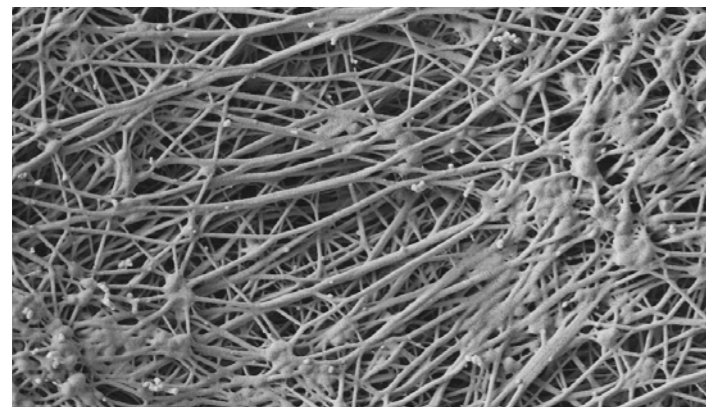
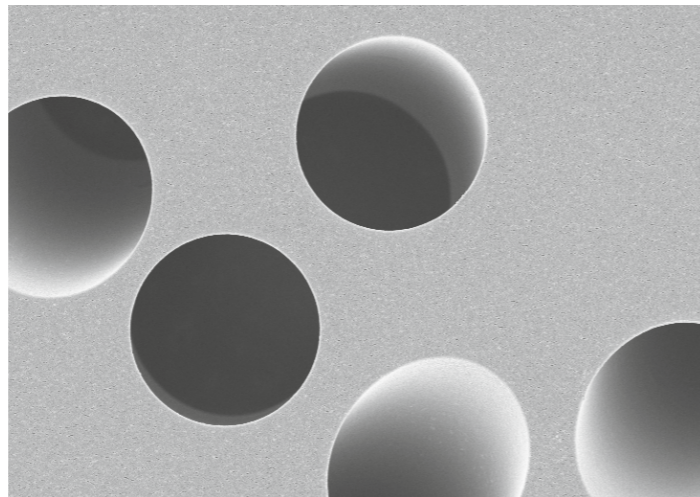
Various filter techniques are used in medical technology, highly sensitive electronic components and lab applications, be it for the detection of bacteria, for cell culture or for sterile venting. All applications – whether for surface filtration or venting – have an important requirement: for optimal results, the polymer membranes must have a precisely determined pore diameter and often also a very smooth surface. The production of such microporous polyester or polycarbonate membranes is highly complex and requires a significant level of expertise.

Track etched membranes by SABEU

As a specialist in the development of custom manufactured track etched membranes, we are one of the world's very few in the industry with such know-how. For our TRAKETCH® Membranes ultra-thin plastic films are bombarded with accelerated heavy ions, further processed and then chemically etched. The diameter of the resulting pore channels can be determined with micrometer accuracy and are precisely processed in clean room manufacturing. In an in-line process, this is continuously controlled throughout the production process.

Customization for versatile applications

Being able to determine an exact pore size sets TRAKETCH® Membranes in a unique position compared to stretched and casted membranes that have wider pore distributions and removal rates, but no distinct pore diameters. Our membranes can also be further refined by special processes to create hydrophobic and oleophobic surfaces and thus be used for various venting applications in medical technology, laboratory analytics, biotechnology, packaging of chemicals and pharmaceuticals, automotive, electronics and many others.



ePTFE filters compared to TRAKETCH®

In case very aggressive chemicals are involved, ePTFE (expanded Polytetrafluoroethylene) membranes become the membranes of choice. They are chemically inert and are also surface treated by us to become oleophobic. Compared to TRAKETCH® the ePTFE membranes have a less accurate pore structure resulting in higher tolerances of the airflow and are not compatible to gamma irradiation. Similar to TRAKETCH® they are supported with PET or PP non wovens for better stability.

Contact us in one of our global offices for support in choosing the right filter membrane for your application.

TRAKETCH® Membranes in use – Examples from day-to-day practice

Patient and medical equipment protection



Many single use components need to protect medical equipment and patients. Examples are spike vents, hearing devices, ostomy bags, transducer protectors and IV sets. TRAKETCH® Venting Membranes have unsurpassed pore accuracy for sterile venting and passed toxicity tests according to USP Class VI to ensure biocompatibility and are FDA compliant. Our membranes are ultra clean, non-shedding, with no leachables and extractables.

Human cell cultivation



TRAKETCH® Membranes are, for example, used for cultivating lung cells and tissue. Unlike membranes with a sponge-like structure, they do not let cells sink into the material and adhere to pores but grow where they are supposed to: On the extremely smooth surface of TRAKETCH® Membranes. Without causing damage the tissue can be easily peeled off for inspection or further use. This principle is also beneficial for cultivating skin cells that are used in transplantations. Another field of application is within the cosmetic and pharmaceutical industries where skin models can partially substitute ethically controversial animal experiments.

Liquid drug filtration



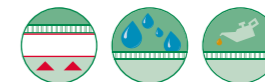
Patient safety and reducing hospital stays increase the effectiveness of medical cost. Some studies have shown complications due to particles, bacteria and others. Using membranes to reduce these complications by retaining particles from entering the body can be a substantial step towards "healthier" hospitals. TRAKETCH® Membranes passed toxicity tests according to USP Class VI and are FDA compliant. Since there are no fibre shedding, extractables and leachables they are ideally suited to be used for infusion and drug delivery systems.

Legionella detection



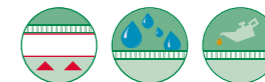
Larger-scale buildings using high volume of heated water are at risk of legionella growth. Inhaling these bacteria, for example with the steam when taking a shower, may cause pneumonia. In many countries the concentration of legionellae in the provided heated water in public buildings like hospitals and hotels is supposed not to exceed certain legal limits. We have developed special TRAKETCH® Membranes for legionella detection.

Automotive venting



Vehicles built today have grown technologically advanced compared to 30 years ago. The aim for automotive OEMs using sensitive electronic and other complex components is to increase their lifespan while retaining liquids and particles. TRAKETCH® Membranes have IP ratings of 67 or 68 (International Protection, also known as Ingress Protection) and with their exactly defined pores, they became an ideal protection for these mechanical and electrical components. In parallel the oleophobic membrane surface allows these components high resistance to environmental impacts. When very high chemical and temperature resistance is required our ePTFE membranes can also be a sufficient solution.

Protection of sensitive electronics



The uniformly sized pore channels of the TRAKETCH® Membranes possess a low variance of pore diameter. Subsequently, air can pass very evenly. At the same time, TRAKETCH® Membranes are not only hydrophobic, but also oleophobic. Consequently, not only water but also other fluids are being repelled. These properties are important for protecting sensitive equipment such as loudspeakers in smartphones which need to be waterproof and permeable to air at the same time. An example: Cars have a variety of sensitive sensors installed. These electronic components must function perfectly under all weather and humidity conditions and thus be protected from dirt residues while being vented sufficiently (IP rating 67 or 68).



Supported



Autoclavable



EtO sterilizable



E-Beam sterilizable



Gamma sterilizable



Hydrophilic



TC treated



Hydrophobic



Oleophobic

Sealing compatibility guide

		ADS	Acrylic	EVA	Latex	Natural rubber	Polycarbonate	Polyester (PBT)	Polyethylene	Polypropylene	PVC	Silicone	Styrene	Synthetic rubber	Urethane (Thermoplastic)
PET	Adhesive sealing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ultrasonic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Heated dies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Radio frequency	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Mechanical seal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Insert molding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PC	Adhesive sealing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ultrasonic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Heated dies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Radio frequency	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Mechanical seal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Insert molding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PTFE	Adhesive sealing	✓	✓	✗	✓	✓	✓	✓	✗	✗	✗	✓	✗	✓	✓
	Ultrasonic	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✗	✓	✗	✓
	Heated dies	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✗	✓	✗	✓
	Radio frequency	✓	✓	✓	✗	✗	✓	✗	✗	✗	✓	✗	✗	✗	✗
	Mechanical seal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
	Insert molding	✓	✓	✓	✗	✗	✓	✗	✓	✓	✓	✗	✓	✗	✓

Compatible
 Not compatible

Chemical resistance overview

Acids		PET	PC	PTFE
Acetic acid, glacial		PET	PC	PTFE
Acetic acid (≤ 90%)		PET	PC	PTFE
Citric acid (1%)		PET	PC	PTFE
Formic acid (5%)		PET	PC	PTFE
Hydrochloric acid, conc. (≤ 35%)		PET	PC	PTFE
Lactic acid (5%)		PET	PC	PTFE
Nitric acid (≤ 1%)		PET	PC	PTFE
Oxalic acid (1%)		PET	PC	PTFE
Phosphoric acid (1N)		PET	PC	PTFE
Sulfuric acid, 6N (≤ 16%)		PET	PC	PTFE

Alcohols		PET	PC	PTFE
Amyl alcohol		PET	PC	PTFE
Benzyl alcohol		PET	PC	PTFE
Butanol		PET	PC	PTFE
Butyl cellosolve (≤ 10%)		PET	PC	PTFE
Ethanol		PET	PC	PTFE
Isopropanol		PET	PC	PTFE
Isopropyl alcohol (≤ 25%)		PET	PC	PTFE
Mercaptoethanol (0.1%)		PET	PC	PTFE
Methanol		PET	PC	PTFE
Methyl alcohol (≤ 25%)		PET	PC	PTFE

Ethers		PET	PC	PTFE
Ethyl ether		PET	PC	PTFE
Tetrahydrofuran		PET	-	PTFE
Tetrahydrofuran/water (50/50,v/v)		PET	PC	PTFE

Glycols		PET	PC	PTFE
Ethylene glycol		PET	PC	PTFE
Glycerol		PET	PC	PTFE
Propylene glycol		PET	PC	PTFE

Aromatic hydrocarbons		PET	-	PTFE
Toluene		PET	-	PTFE
Xylene		PET	-	PTFE





Oils		PET	PC	PTFE
Cottonseed		PET	PC	PTFE
Peanut		PET	PC	PTFE

Halogenated hydrocarbons		PET	-	PTFE
Carbon tetrachloride		PET	-	PTFE
Chloroform		PET	-	PTFE
Ethylene dichloride		PET	-	PTFE
Methylene chloride		PET	-	PTFE
Tetrachloroethylene		PET	-	PTFE

Ketones		PET	PC	PTFE
Acetone		PET	PC	PTFE
Cyclohexanone		PET	-	PTFE
Methyl ethyl ketone (MEK)		PET	PC	PTFE
Methyl isobutyl ketone		PET	PC	PTFE
Phenol (0.5%)		PET	PC	PTFE

Miscellaneous		PET	-	PTFE
Acetonitrile		PET	-	PTFE
Calcium Chloride (5%)		PET	PC	PTFE
Dimethyl formamide (DMF)		PET	-	PTFE
Dimethyl sulfoxide (DMSO)		PET	-	PTFE
Disodium salt of EDTA (10%)		PET	-	PTFE
Formaldehyde (≤ 37%)		PET	-	PTFE
Glutaraldehyde (0.5%)		PET	PC	PTFE
Guanidine HCl (6M)		PET	PC	PTFE
Hexane, dry		PET	PC	PTFE
Hydrogen peroxide (1%)		PET	PC	PTFE
Kerosene		PET	PC	PTFE
N-Methyl pyrrolidone (1%)		PET	PC	PTFE
Phosphate buffer (1M) (pH 8.2)		PET	PC	PTFE
Phosphate buffer (1M) (pH 8.2)		PET	PC	PTFE
Pyridine		PET	-	PTFE
Sodium azide (1%)		PET	PC	PTFE
Sodium chloride (5%) (50°C)		PET	PC	PTFE
Sodium dodecyl sulfate (0.01M)		PET	PC	PTFE
Sodium nitrate		PET	PC	PTFE
Tris buffer (1M) (pH 8.2)		PET	PC	PTFE
Trton X-100 (0.002M)		PET	PC	PTFE
Urea (25%)		PET	PC	PTFE
18 Megohm water		PET	PC	PTFE

Hydrophobic filter media – For venting applications

Material type	TRAKETCH® PET VENT					Membrane ePTFE (VENT)				
Non-woven support	PET or unsupported					PET or PP				
Surface characteristics										
Main feature (Typical values)	Pore size (µm)	AFR ¹	WEP ²	Thickness (µm)	Item number	Pore size (µm)	AFR ¹	WEP ²	Thickness (µm)	Item number
	0.2	1.5	≥ 4.0	36	040 470	0.2	3	≥ 5	180	M40269
	0.2	3.7	≥ 3.5	140	063 390	–	–	–	–	–
	0.2 hf	8.0	≥ 1.8	140	063 090	–	–	–	–	–
	0.45	5.5	≥ 1.8	36	040 300	0.45	5	≥ 4	170	M40270
	0.45	8.0	≥ 1.8	140	063 480	–	–	–	–	–
	0.8	19	≥ 1.0	140	063 080	–	–	–	–	–
	1.0	18	≥ 0.8	36	040 290	1.0	13	≥ 1.6	150	M40271
	1.0	26	≥ 0.6	140	063 070	1.5	30	≥ 1.4	160	M40277
	1.2	45	≥ 0.6	140	063 320	3.0	80	≥ 0.8	190	M40276
Chemical compatibility	Very good for all Life Sciences and Medical applications					Very good for all Industrial applications				
Mechanical stability	Flexible as unsupported membranes Rigid as supported membranes					Flexible				
Compatibility to sterilization										
Temperature resistance	160 °C					160 °C on PET backing 120 °C on PP backing				
Roll width	10–300 mm					10–300 mm				
Sheet size	Up to 300 x 300 mm					Up to 300 x 300 mm				
Disc diameter	13, 25, 47 mm or on request					13, 25, 47 mm or on request				
Disc diameter on adhesive liner	On request					On request				
Adhesive ring, outer / inner diameter	E.g. 8 mm / 4 mm on liner					E.g. 8 mm / 4 mm on liner				

Other items and customized products upon request.

¹AFR = Typical air flow rate, i.e. the amount of air that flows through a specific area in a certain time under a defined pressure [L / (min·cm²·bar)]

²WEP = Typical water entry or intrusion pressure, i.e. the power that is needed to press water into the membrane [bar]



SABEU – Plastics and Membrane Technology

Tailor-made solutions, mature standards

We are a leading system provider of microporous filter membranes and injection molded components. We are cooperating with our customers to resolve current challenges and offer best solutions in Life Sciences, Medical, Packaging and further Industries. Thanks to this cooperative approach and the steadily growing know-how, we have been successful on the market for decades and are optimally prepared for the future.

Injection molding and filtration are our passion. In these areas we develop products based on customer specifications, manufacture serial products and set own standards with our FLUXX® and TRAKETCH® product lines – all Made in Germany.

Our work is based on the knowledge and understanding of material and component behavior. What's more: We are specialists in mechanical engineering. These are the foundations for the design and manufacture of cost optimized complete engineering solutions that guarantee the highest degree of quality, reliability and functional safety.

R&D and design

In a close dialog with our customers, we develop solutions in the plastics and membrane technology. The marketability of innovative and high-quality products is our claim – always in compliance with the regulatory provisions.



Mold manufacturing

We manufacture, service and repair our own mold tools and those of our customers.

TRAKETCH® and injection molding

As the producer of the microporous TRAKETCH® and ePTFE membranes we can integrate our membrane in various injection molding processes we perform in house.

Assembly and logistics

Depending on the component, different steps such as welding, gluing, hot caulking, riveting and inline tests – dimensional or visual inspections with camera systems – can be integrated into the assembly process. After the final inspection, we will deliver the devices just in time to your warehouse or via one of our subsidiaries in the EU, NAFTA or PRC to a destination of your choice.

