
OXYPHEN FILTRATION SOLUTIONS

Highly customizable pore size and density for enhanced precision and control

FILTRATION SOLUTIONS

A common design challenge for medical device manufacturers is ensuring the filtration media can effectively prevent the spread of viral and bacterial particles in critical healthcare environments. Filtration media that is ineffective in this regard can lead to healthcare associated infections (HAI) or other viral agents which extend hospitalizations and costs for users of the device. In some cases, patient and healthcare workers' lives can be at risk if there is not sufficient protection against blood-borne and aerosolized viruses.

From blood management to infusion filters, manufacturers can work with Oxyphen to determine the small particle retention and flow rates needed for their sterile filtration application. Our track-etched membrane technologies have highly defined pore structures to offer a safe and reliable solution for devices that must meet viral filtration efficiency (VFE) and bacterial filtration efficiency (BFE) standards. Oxyphen membranes have extremely high VFE (>99.9999%) and BFE (>99.9999%) ratings to preserve samples and reagents from contamination as well as protect workers from bloodborne pathogen exposure.

Cell Culture Inserts

Cell culturing is a key method used to isolate, analyze and grow human or animal cells under controlled conditions. While used in a variety of applications, cell culturing is heavily applied in biochemical, molecular, and physiological studies of metabolism and drug testing. Cell culturing helps understand how monoclonal antibodies, vaccines and therapeutic proteins interact with other chemicals for therapeutic studies.

Our cell culture inserts can be manufactured with a variety of Unique-Mem® track-etched membranes and are bonded directly to the insert. The combination of the membrane sealing process with the Unique-Mem® membrane creates a strong bond between the plastic body and a perfectly smooth membrane surface, usable even for large inserts and in unique larger cell culture formats like rectangular or round versions with growth areas of up to 100 cm² or even larger.



Oxyphen track-etched membranes are a perfect fit for this application, given the highly controlled membrane performance parameters, the wide variability in membrane thickness and pore size to regulate the nutrient media transport to the cells that facilitates the correct growth. When combined with our membrane assembly processes, customers can choose from a variety of cell culture inserts based on either a standard hanging design for three well sizes (6-, 12- and 24-well inserts) or a customized design per customer-specific requirements. bigger cell culture formats like rectangular or round versions with growth areas of up to 100 cm². These customized rectangular inserts are used for tissue engineering, such as growing human skin for burn patients.

Key Benefits

- Excellent cell attachment and growth
- Best fluorescence imaging quality
- High visibility of particles and cells
- Backflushing allows reproducible sample recovery
- 100% Free of PFOA: Compliant with (EC) 1907/2006 REACH / Regulation (EU) 2019/1021 POP

For cell culturing, applications such as co-culture, secretion, cytotoxicity studies and drug transport research, smaller pore sizes are recommended (~ 0.4µm – 1.0µm). Pore sizes from 3.0µm up to 8.0µm are suggested for chemotactic studies and/or migration, invasion. The thicknesses of the membranes range from 8 µm to 23 µm. More specific technical information is found below.

Technical Specifications

Available Options	
Airflow	Up to 800 l / (bar cm ² min)
Pore Size	0.1µm to 10µm
Pore Density	0.01M to 1,000M pores per cm ²
Thickness	8µm to 50µm
Temperature Range	- 40°C and 160°C (up to 200°C)
Hydrophilic Treatments	Various hydrophilic treatments increase water flow rate and wetting abilities of the membrane
Sterilization Procedures	Stable against Gamma and X-ray

Material Options

Unique-Mem® PET track etched membranes un laminated

Related Products

- Rollstock membrane
- Assemblies & Modules
- OxyPad® self-adhesive membrane pads
- OxyDisc® die-cut membrane discs

Related Technologies

- Unique-Mem® track-etched membranes
- RoTrac® track-etched membranes



Infusion Filters for Drug Delivery

Infusion filters are used to reliably prevent particles from entering the human body to prevent life-threatening blood clots or to distribute drugs in a precise and controlled pattern. The filtration / retention rate can be determined by choosing the correct pore size. By selecting the appropriate pore size, customers can determine the retention rate for small particles and as well as the flow rate for the infusion solution by correlating the membrane flow rate with the priming pressure of the drug delivery solution.

Because our track-etched membranes have a highly defined pore structure, along with adjustable pore size and flow parameters, they can offer a unique solution for every infusion filter application. In addition, mounting can be done conveniently via ultrasonic welding or other assembly methods.

Key Benefits

- Variable pore size with high precision
- Customizable air flow/media flow through the hydrophilic membrane
- Irradiation stability towards Gamma and X-ray for very convenient sterilization of the whole unit
- 100% Free of PFOA: Compliant with (EC) 1907/2006 REACH / Regulation (EU) 2019/1021 POP

Technical Specifications

Available Options	
Pore Sizes	0.1 µm up to 10.0 µm
Airflow	Up to 18 l / (bar cm ² min)
Temperature range	- 40 to +150 °C (< 180°C for special applications)
Stability	Stable against Gamma and X-ray irradiation (and E-beam radiation)

Material Options
PET Track-Etched Membranes unlaminated
PET Track-Etched Membranes laminated with PET/ PP non-woven material
Additional membrane materials available upon request

Related Products

- Rollstock membrane
- Assemblies & Modules
- OxyPad® self-adhesive membrane pads
- OxyDisc® die-cut membrane discs

Related Technologies

- Unique-Mem® track-etched membranes
- RoTrac® track-etched membranes

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