OXYPHEN FILTRATION SOLUTIONS

Highly customizable pore size and density for enhanced precision and control

oxyphen
Filtration Group

OXYPHEN FILTRATION SOLUTIONS

Filtration is a process that happens all around us and even inside us. We enjoy drinking water that is filtered to remove solids and other impurities, and many manufacturing processes and products utilize filtration media to ensure functionality, protect critical components and reduce contamination of the environment.

Oxyphen's Unique-Mem® track-etched membranes have been used for many years by global leaders in tissue engineering and pharmaceutical research as cell culture inserts due to their precise filtration capability and hydrophilicity. In addition to cell culture, our track-etched membranes have been successfully used as infusion filters for IV drug delivery to ensure precise flow control and filtration efficiency, preventing any particles from endangering the patient.

Rollstock Membrane

Cell Culture Inserts

Cell culture inserts are widely used for either cell growth for R&D applications, drug testing or used for in vitro analysis. Our track-etched membranes fit the application well, given the wide variability in membrane thickness and pore size needed to regulate the nutrient media transport to the cells that facilitates the correct growth. The inserts are widely used for either screening or distinct cell growth projects.

We offer a variety of cell culture inserts based on either a standard hanging design for three well sizes (6-, 12- and 24-well inserts) or as a customized design per customer-specific requirements. All 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 betweeen the membrane and polystyrene insert and hence a perfectly smooth membrane surface, possible even for large inserts. If in-house manufacturing is preferred, Unique-Mem membranes can also be supplied as pre-treated rollstock.

Tissue and large cell cultivation/growth is an area of increased interest, which can either be performed in standard cell culture inserts for use in cosmetics, analytics and R&D projects or also in special bigger cell culture formats like rectangular or round versions with growth areas of up to 100 cm^2. These customized rectangular inserts are used for tissue engineering, such as growing human skin for burn patients.

Key Benefits

- Highly precise membrane parameters for reproducible cell growth
- High variability of pore size and density (standard and customized if required)
- Stable against Gamma and X-ray sterilization procedures
- Hydrophilicity is adjustable

Technical Specifications

Available Options	
Pore sizes	0.2 µm up to 8.0 µm
Well formats	6, 12 and 24 well formats or tailored to customer specification
Hydrophilicity	All membranes are hydrophilic, and can be increased with special coating
Other treatments	Special cell culture surface treatment
Temperature range	– 40 to +150 °C
Stability	Stable against Gamma- and X-ray irradiation in addition to EtO sterilization (also E-beam stable)

Material Options
Unique-Mem® PET track etched membranes unlaminated

Related Products

- Rollstock membrane
- Assemblies & Modules

Related Technologies

- Unique-Mem® track-etched membrane technology

Cell Culture Inserts

IV Drug Delivery

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 and pore density combination. By selecting the best pore size, customers can determine the retention rate for small particles and determine 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 with ultrasonic welding or other assembly methods.

Key Benefits

- Variable pore size and pore density 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

Technical Specifications

Available Options	
Pore sizes	0.1 µm up to 10.0 µm
Airflow	Up to 800 l / (bar cm^2 min)
Temperature range	– 40 to +150 °C
Stability	Stable against Gamma- and X-ray irradiation (and E-beam radiation)

Material Options
Unique-Mem® PET track-etched membranes (unsupported)
RoTrac® PET track-etched membranes laminated with PET/ PP non-woven

Related Products

- Rollstock membrane
- Assemblies & Modules

Related Technologies

- Unique-Mem® track-etched membrane technology
- RoTrac® track-etched membrane technology

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