ISOTROPIC AAO MEMBRANES – PRODUCT INFORMATION

SPI Supplies
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InRedox Isotropic Anodic Aluminum Oxide Membrane Filters

Isotropic Anodic Aluminum Oxide (AAO) have uniform pore structure across the entire thickness and on both faces of the membrane, making them ideal for transport studies in nanochannels.

Isotropic AAO have a range of standard pore diameters from 10 to 200 nm. The pores are essentially monodisperse with a pore diameter distribution that is typically less than 10% (full width, half max).

The membrane filters are far less brittle than similar ceramic membrane filter products ensuring easier handling, usage and less loss of product or samples during preparation.

Membrane Features

- Precise and reproducible pore geometries
- Pore size from 2 nm to 200 nm
- Narrow pore size distribution, sharp molecular weight cutoff
- Uniform Isotropic pore structure
- Smooth flat surface, low fouling, straight pores
- Optically transparent when wet, low autofluorescence
- Surface terminated with -OH-groups for binding protocols
- Naturally hydrophilic, no extractables or leachables
- Excellent bath-to-batch consistency

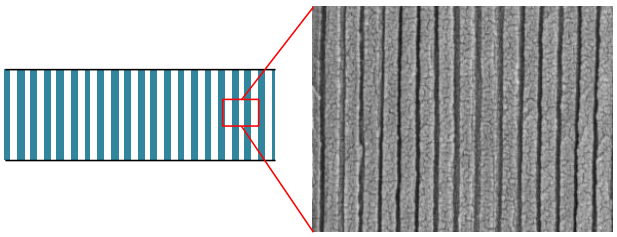
	Pore Geometries for Isotropic AAO Membranes					
Parameter						Tolerance
Pore Diameter (nm)	10	20	40	100	200	±(10%+2nm)
Pore Period (nm)	26	44	107	250	470	±(15%+5nm)
Pore Density (cm-2)	$1.6 \cdot 10^{11}$	$5.8 \cdot 10^{10}$	$1.0 \cdot 10^{10}$	$2 \cdot 10^{9}$	$5 \cdot 10^{8}$	±20%
Porosity (%)	12	12	12	15	15	±3

Attributes of Isotropic Ceramic AAO Membranes	
Size (mm dia) ±0.2 mm	13, 25
Thickness (µm) ±(10% +1µm)	50
Nominal weight (mg/cm2)	10 to 20
Burst strength (psi)	50 to 200 (depending on pore size) for 50 µm membrane over 3 mm span
Max Service Temp (°C)	400
pH range	5-8
Solvent Resistance	Excellent (can be used with most organic solvents)
Autoclavable?	Yes
Air Permeance (cm/s/Pa at 20°C)	10^{-8} to 10^{-4} (depending on pore size and porosity)
Water Permeance (cm/s/Pa at 20°C)	10^{-10} to 10^{-6} (depending on pore size and porosity)

Uniform pores and constant pore diameter across membrane thickness

- Pore diameter 10 – 200 nm
- Thickness 50 µm

Applications: templated nanofabrication, energy conversion, transport in nanopores; diffusion-based separation, catalytic membrane-reactors, chemical & biosensing



Other pore sizes, filter diameters may be available. Please contact SPI Supplies for further information.

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