

TRACK ETCHED MEMBRANE - A UNIQUE FILTER FOR ANALYTICAL TESTING

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When choosing the appropriate filter media for a particular application, many criteria must be considered. For general filtration applications the chemical compatibility, particle retention, flow rate and filter capacity are often primary considerations. For certain analytical methods other factors must be considered. For analytical test methods where it is critical that all target particles/cells are captured and presented for inspection/testing on the filter surface, Track Etched Membranes (TEM) offer an ideal substrate.

Microporous membrane filters (nylon, PES, nitrocellulose, etc.) utilize cast membrane with a relatively high pore distribution, relying on the tortuous paths formed in a thick media (50 - 200 micron) in order to achieve retention. Track etched membranes consist of thin polymer films of polycarbonate or polyester (typically 6 - 30 micron) with uniform cylindrical pores penetrating the depth of the film. Through a well-controlled process, the range of observed pore size can be controlled within 20% of the target pore size. TEM provides an ideal surface from which to capture, with near 100% retention, particles of a given diameter into a single flat plane for inspection via microscopy or a variety of cellular staining methods. These applications include analytical testing for microbial evaluations of water, food and beverage, pharmaceutical production/quality, environmental applications for the evaluation of air/fuels and bio-threat detection. This talk will provide an overview of the unique method of preparing TEM as well as some analytical applications for which the membrane is ideally suited.