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(54) Title: ULTRAPOROUS NANOFIBER MATS AND USES THEREOF

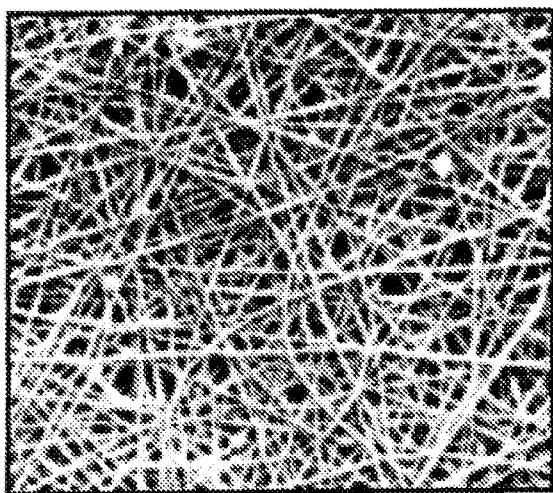


Figure 1

(57) Abstract: A porous electrospun polymeric nanofiber liquid filtration medium, such as an electrospun mats, used for the removal of viral particles (e.g., parvovirus) and other particles in the 18 nm to 30 nm size range from fluid streams, having a mean flow bubble point measured with perfluorohexane above 100 psi. The electrospun medium includes nanofibers having an average fiber diameter of about 6 nm to about 13 nm, and the nanofiber liquid filtration medium has a mean pore size ranging from about 0,01 μ m to about 0,03 μ m, a porosity ranging from about 80% to about 95%, a thickness ranging from about 1 μ m to about 100 μ m, and a liquid permeability greater than about 10 LMH/psi. The high porosity of the electrospun mats enable much higher water fluxes, thus reducing the time required to complete virus filtration steps on a fluid stream.



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