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Nanoporous Membrane with Ultrahigh Selectivity and Flux Suitable for Filtration of Viruses[1] JIN KON KIM, Department of Chemical Engineering, Pohang University of Science and Technology, SEUNG YUN YANG, Department of Environmental Science and Engineering, Pohang University of Science and Technology, IN CHEOL RYU, SUNG KEY JANG, Department of Life Sciences, Pohang University of Science and Technology, THOMAS P. RUSSELL, Polymer Science and Engineering Dept., Univ. of Massachusetts at Amherst — We introduce a new double layered nanoporous membrane suitable for virus filtration. One layer is an 80 nm thick film having cylindrical pores with diameters of 15 nm and a narrow pore size distribution. This layer is prepared by using a thin film of the mixture of a block copolymer and a homopolymer, and mainly acts to separate viruses. The support layer is a conventional micro-filtration membrane with a broad pore size distribution. This asymmetric membrane showed very high selectivity and flux for the separation of human rhinovirus type 14 which has a diameter of $\sim$ 30 nm and is a major pathogen of the common cold in humans.

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