

ABSTRACT**TRANSPARENT COMPOSITE MEMBRANE**

A transparent and flexible composite membrane produced from two immiscible polymers. The first polymer is a polymeric fibrous network with interconnecting pores. The second polymer is an elastomer with a refractive index matching the first polymer. The resultant composite membrane is a transparent interpenetrated network of polymers with a single melting point, an altered molecular structure, and mechanical strength superior to the parent polymers. A method of producing the new composite membrane involves dissolving the elastomer in a suitable solvent to form a diluted elastomeric solution, impregnating the polymeric membrane with the elastomer by adding the diluted elastomeric solution to the membrane to form a wet composite membrane, and then drying the wet composite membrane to form a interpenetrated membrane in which pores are essentially removed.

FIGURE 1