**334c Macrovoids in Mixed Matrix Hollow Fiber Membranes**

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Large characteristically tear or finger shaped voids found in polymer hollow fiber membranes, termed macrovoids, have been known since the early development of asymmetric membranes. These voids are undesirable as they decrease the mechanical integrity of the hollow fiber membrane, restricting membrane usage with high pressure feeds. With current membrane technology moving towards a mixed matrix format with inorganic molecular sieves embedded in a polymer matrix, the presence of macrovoids must be viewed in light of additional complications caused by the spinning of the mixed matrix dopes, i.e., suspension spinning. While numerous hypotheses have been placed forward on the formation of macrovoids formed in conventional membranes, no mention so far has been made of such macrovoids initiated in hollow fiber membranes by particles embedded in the polymer matrix. This paper provides evidence for the presence of such macrovoids and presents a hypothesis for their formation and concludes that the basic mechanism for macrovoid formation in mixed matrix membranes remains the same as that applied for conventional polymer-only asymmetric membranes. Further, it is hypothesized that such macrovoids can be suppressed or even eliminated by decreasing the inorganic sieve particle size.