

Abstract

This invention relates to a hollow fiber membrane and the preparation thereof. The membrane forming system comprises (wt. %): polyurethane 25~45, composite pore forming agent 35~60, and organic low molecular weight liquid 15-20. The sum of the components is 100%; aforesaid polyurethane is of fiber grade with mass ratio between rigid and soft segments up to 1/1~1/5; aforesaid composite pore forming agent is a mixture of interfacial pore forming agent and non-interfacial pore forming agent; aforesaid organic low molecular weight liquid refers to good solvent of water soluble polyurethane of high boiling point; Such membrane is manufactured with the following melt-spinning method: Firstly, prepare polymer membrane forming system according to requirements for mass percent formula of aforesaid hollow fiber membrane before pouring it into the hybrid cauldron for heated forcible premixing at the heating temperature of 130~140°C; inject the mixture uniformly mixed into the twin screw extruder for dissolution and fusion prior to membrane manufacturing with melt-spinning methods through hollow spinning assembly at the temperature of 130~155°C; after that, hollow fiber membrane can be obtained after stretching process and extraction-in-water as conventional wet-spinning method.



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