

Ag⁺ - Chitosan Complex Membranes for Propylene/Propane Separation

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We have prepared new water-swollen chitosan-Ag⁺ complex membranes and studied their permeation and separation behaviors for propylene and propane gases. The AgNO₃ and water content in Ag⁺ - chitosan complex membrane were controlled by adjusting AgNO₃ concentration of casting solution. The permeation properties of propylene and propane were investigated as a function of AgNO₃ concentration, and various operation conditions. High permeability of above 17 barrer and high selectivity of above 170 could be obtained with the membranes prepared from 3M AgNO₃ aqueous solution.

Periodic regeneration with 3M solution confirmed these membranes could be very useful for the separation of propylene/propane and other olefin/paraffin separation.