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Dehumidification of Air Using Zeolite-filled Triethylene Glycol Liquid Membranes

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Zeolite-filled liquid membranes were prepared by coating zeolite particles (2-3 μm) and triethylene glycol (TEG) mixture on a hydrophobic microporous membrane. Permeation experiments for the dehumidification of air were conducted using the zeolite-filled liquid membranes under reduced pressure at the permeate side. To reduce the air permeation rate to suitable levels, the membrane thickness should be over 300 μm . The dehumidification performance of the zeolite-filled membrane was comparable to the supported liquid membrane using TEG liquid. The ideal separation factor of water vapor over air was 25 for the zeolite 3A (60 wt%)-TEG liquid membrane. The present zeolite-liquid membrane has advantages in membrane preparation and durability compared to the supported liquid membrane or zeolite-filled polymer membrane.

Keywords: [Zeolite](#), [Triethylene glycol](#), [Dehumidification](#), [Membrane](#)

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