

CO₂ Separation from Nitrogen Using Membranes Made of Poly(2,4-dimethyl-1,6-phenylene oxide) and its Bromine Derivatives

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Low molecular weight poly(2,4-dimethyl-1,6-phenylene oxide), PPO, in the range of 8500-17000 does not affect CO₂ permeability and CO₂/N₂ selectivity. Glass and stainless steel are used to study their substrate effect. PPO membranes made on stainless steel show higher gas permeability and higher glass transition temperature. We found that bromine modified PPO can improve CO₂ permeability with no change in CO₂/N₂ selectivity if bromine is substituted in the ring position but not in the methyl position.