

Isoprene/n-pentane separation using facilitated transport membranes containing SPEEK-AgNO₃

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The separation of olefin from hydrocarbon mixtures is an important part of petrochemical industry. Since conventional cryogenic distillation processes for the separation of olefin/paraffin are energy-intensive, an alternative energy saving process is requiring. Among a number of alternative technologies, the separation using facilitated transport membranes with metal ion such as Cu⁺ or Ag⁺ was attracted much interest because of its low energy consumption process. The facilitated transport membranes, sulfonated poly(ether ether)ketone (SPEEK)-AgNO₃, were prepared and tested for separation of the isoprene/n-pentane mixtures. The performances of the membranes were significantly affected by the degree of sulfonation (DS) of PEEK. The selectivity over n-pentane increased with the increasing DS of PEEK.