

Title (en)
MEMBRANE FOR GAS PHASE SEPARATION AND SUITABLE METHOD FOR THE PRODUCTION THEREOF

Title (de)
MEMBRAN FÜR GASPHASENSEPARATION SOWIE DAFÜR GEEIGNETES HERSTELLUNGSVERFAHREN

Title (fr)
MEMBRANE POUR SEPARATION EN PHASE GAZEUSE ET PROCEDE DE PRODUCTION APPROPRIE

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Application
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Abstract (en)
[origin: WO2006105771A1] The invention relates to a method for the hydrothermal production of a microporous membrane. According to said method, a colloidal solution comprising zeolite frameworks with 4-ring, 6-ring, and/or 8-ring pores which are provided as crystallites whose size ranges from 2 to 25 nm is applied to a porous substrate with the aid of a wet application technique. The applied layer is contacted with a hydrothermal liquid, and a nanocrystalline, microporous zeolite layer having an average pore diameter of 0.2 to 0.45 nm is synthesized at temperatures ranging between 50 and 250 °C and at an autogenous pressure. Such a microporous membrane comprising a porous substrate and at least one nanocrystalline zeolite layer that is disposed thereupon and has an average pore diameter of 0.2 to 0.45 nm is advantageously suitable for use as a separating device for gas phase separation, making it possible to separate particularly N₂/O₂, N₂/SUB>/CO₂, H₂/CO₂, or CO₂/CH₄ gas mixtures. Said separating device is especially temperature-resistant and can therefore be integrated directly into thermal processes.

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