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

Publication

EP 1877167 A1 20080116 (DE)

Application

EP 06722743 A 20060401

Priority

- DE 2006000593 W 20060401
- DE 102005016397 A 20050408

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/CO₂, H₂/CO₂, or CO₂/CH₄ gas mixtures. Said separating device is especially temperature-resistant and can therefore be integrated directly into thermal processes.

IPC 8 full level

B01D 71/02 (2006.01); **B01D 53/22** (2006.01)

CPC (source: EP US)

B01D 53/228 (2013.01 - EP US); **B01D 67/0051** (2013.01 - EP US); **B01D 67/0083** (2013.01 - EP US); **B01D 69/108** (2022.08 - EP US); **B01D 71/0281** (2022.08 - EP US); B01D 2257/504 (2013.01 - EP US); B01D 2323/24 (2013.01 - EP US); B01D 2325/02831 (2022.08 - EP US); B01D 2325/04 (2013.01 - EP US); B01D 2325/22 (2013.01 - EP US); Y02C 20/40 (2020.08 - EP US)

Citation (search report)

See references of WO 2006105771A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2006105771 A1 20061012; DE 102005016397 A1 20061012; EP 1877167 A1 20080116; JP 2008534272 A 20080828; US 2009266237 A1 20091029

DOCDB simple family (application)

DE 2006000593 W 20060401; DE 102005016397 A 20050408; EP 06722743 A 20060401; JP 2008504614 A 20060401; US 88781606 A 20060401