

Title (en)
HIGH PERFORMANCE CROSS-LINKED POLYBENZOXAZOLE AND POLYBENZOTHAZOLE POLYMER MEMBRANES

Title (de)
VERNETZTE HOCHLEISTUNGS-POLYBENZOXAZOL- UND POLYBENZOTHAZOL-POLYMERMEMBRANEN

Title (fr)
MEMBRANES POLYMÈRES DE POLYBENZOXAZOLE ET DE POLYBENZOTHAZOLE RÉTICULÉS À HAUT RENDEMENT

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Abstract (en)
[origin: WO2010110975A2] In the present invention high performance cross-linked polybenzoxazole and polybenzothiazole polymer membranes and methods for making and using these membranes have been developed. The cross-linked polybenzoxazole and polybenzothiazole polymer membranes are prepared by: 1) first synthesizing polyimide polymers comprising pendent functional groups (e.g., -OH or -SH) ortho to the heterocyclic imide nitrogen and cross-linkable functional groups in the polymer backbone; 2) fabricating polyimide membranes from these polymers; 3) converting the polyimide membranes to polybenzoxazole or polybenzothiazole membranes by heating under inert atmosphere such as nitrogen or vacuum; and 4) finally converting the membranes to high performance cross-linked polybenzoxazole or polybenzothiazole membranes by a crosslinking treatment, preferably UV radiation. The membranes can be fabricated into any convenient geometry. The high performance cross-linked polybenzoxazole and polybenzothiazole polymer membranes of the present invention are suitable for a variety of liquid, gas, and vapor separations.

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