

Title (en)
MONOLITHIC FILTER

Title (de)
MONOLITHISCHER FILTER

Title (fr)
FILTRE MONOLITHIQUE

Publication
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Application
EP 16825511 A 20161214

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Abstract (en)
[origin: WO2017103473A1] The present invention relates to a monolithic membrane filter for filtering liquids, comprising: a support member composed of a porous inorganic material with a permeability K_s , said support member having a tubular shape with a main axis, an upstream base, a downstream base, a peripheral surface and an inner portion; a plurality of channels parallel with the main axis of the support member, formed in the inner portion of the latter, said channels being separated from each other by internal walls composed of the porous inorganic material; at least one slot formed in the inner portion of the support member and opening onto the peripheral surface such that the filter has an outer surface formed by the peripheral surface of the support member and the surface of said at least one slot; and a membrane, with a permeability K_m and a mean thickness t_m , covering the inner surface of the channels; characterised in that the mean distance of travel D , defined by the arithmetic mean of the minimum distances between the center of each channel and the outer surface of the filter, satisfies the following relationship: $D = a \cdot \exp(B) \cdot (K_{stm}/K_m)A$, in which a is a coefficient in the range of 0.0008 to 0.0012; $A = -21.5 \cdot 0_c + 15.4 \cdot \pi + 0.16 \cdot 0_f + 0.31$; and $B = 561 \cdot \pi + 101 \cdot 0_c + 1.16$; where 0_c is the mean hydraulic diameter of the channels, 0_f is the hydraulic diameter of the filter and π is the mean thickness of the inner walls.

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