

Title (en)  
Micro fluid diode

Title (de)  
Mikro-Fluiddiode

Title (fr)  
Micro diode fluidique

Publication  
**EP 0672835 B1 19990512 (DE)**

Application  
**EP 95101737 A 19950209**

Priority  
DE 4405005 A 19940217

Abstract (en)  
[origin: US5730187A] PCT No. PCT/DE95/00200 Sec. 371 Date Oct. 16, 1995 Sec. 102(e) Date Oct. 16, 1996 PCT Filed Feb. 17, 1995 PCT Pub. No. WO95/22696 PCT Pub. Date Aug. 24, 1995 The present invention pertains to a fluid microdiode for directionally incorporating a dosed fluid into another stationary or flowing target fluid contained in a closed system, especially in the submicroliter range. It is characterized by a planar arrangement of a microcapillary open on both sides or a system of closely juxtaposed microcapillaries open on both sides being in direct contact with the target fluid on the outlet side thereof and being separated from the discontinuously supplied dosed fluid on their inlet side by an air or gas cushion, forming a meniscus (6) which is curved according to the surface tension. As a device (1), said fluid microdiode consists of a stacked arrangement of a flow channel (9), the actual diode in the form of a grid structure formed by capillaries, and a spacer chip (2), securing the gaseous medium in the region of the coupling surface. These three stacked elements are prepared as modules using technologies of microstructural engineering and may be integrated in microsystems by means of microsystem engineering constructing and connecting techniques. The fluid microdiode is characterized by a simple construction and coupling flexibility to various microflow systems in which exists a hydrostatic pressure in the range of the prevailing ambient pressure.

IPC 1-7  
**F15C 4/00**

IPC 8 full level  
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Cited by  
US6117396A; US5964997A; US6033544A

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**US 5730187 A 19980324**; AT E180044 T1 19990515; DE 4405005 A1 19950824; DE 59505877 D1 19990617; DK 0672835 T3 19991129; EP 0672835 A1 19950920; EP 0672835 B1 19990512; JP 3786421 B2 20060614; JP H09509466 A 19970922; WO 9522696 A1 19950824

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