

Title (en)
HIGH-PRESSURE SMALL VOLUME PUMP

Title (de)
HOCHDRUCK-KLEINVOLUMEN-VERDRÄNGERPUMPE

Title (fr)
POMPE HAUTE PRESSION A FAIBLE VOLUME

Publication
EP 1514027 B1 20111207 (EN)

Application
EP 03727124 A 20030618

Priority
• EP 03727124 A 20030618
• CH 0300394 W 20030618
• EP 02405509 A 20020619

Abstract (en)
[origin: EP1375921A1] A pump includes a seal (70) which comprises a c-shaped sealing element with a sealing lip. The surface of sealing lip is pressed against a piston (8) using a c-shaped spring provided on the opposing surface of the sealing lip contacting a displacement chamber (89). An incompressible filling element is inserted into the spring. Independent claims are also included for the following: (1) dead space adjustment method; and (2) high-pressure chromatography device.

IPC 8 full level
F04B 53/16 (2006.01); **F04B 11/00** (2006.01); **F04B 53/14** (2006.01)

CPC (source: EP)
F04B 11/0075 (2013.01); **F04B 53/147** (2013.01); **F04B 53/16** (2013.01); **F04B 53/162** (2013.01); **F04B 53/164** (2013.01); **F04B 2201/0201** (2013.01); **F05C 2203/08** (2013.01); **F05C 2225/04** (2013.01); **F05C 2225/12** (2013.01)

Cited by
DE102011056094A1; DE102011056094B4; EP2602518A1; US9133944B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 1375921 A1 20040102; AT E536477 T1 20111215; AU 2003233907 A1 20040106; AU 2003233907 A8 20040106; CA 2485552 A1 20031231; CA 2485552 C 20110823; CN 100406734 C 20080730; CN 1662745 A 20050831; DE 60326841 D1 20090507; EA 009029 B1 20071026; EA 200401530 A1 20061027; EP 1514027 A2 20050316; EP 1514027 B1 20111207; WO 2004001228 A2 20031231; WO 2004001228 A3 20040304

DOCDB simple family (application)
EP 02405509 A 20020619; AT 03727124 T 20030618; AU 2003233907 A 20030618; CA 2485552 A 20030618; CH 0300394 W 20030618; CN 03814123 A 20030618; DE 60326841 T 20030618; EA 200401530 A 20030618; EP 03727124 A 20030618