

Title (en)

METHOD FOR THE SURFACE TREATMENT OF A FLUID PRODUCT DISPENSING DEVICE

Title (de)

VERFAHREN ZUR OBERFLÄCHENBEHANDLUNG EINER VORRICHTUNG ZUR AUSGABE EINES FLÜSSIGPRODUKTS

Title (fr)

PROCEDE DE TRAITEMENT DE SURFACE D'UN DISPOSITIF DE DISTRIBUTION DE PRODUIT FLUIDE

Publication

**EP 2588641 A2 20130508 (FR)**

Application

**EP 11741628 A 20110701**

Priority

- FR 1002868 A 20100708
- FR 1055347 A 20100702
- FR 2011051548 W 20110701

Abstract (en)

[origin: WO2012001328A2] The invention relates to a method for the surface treatment of a fluid product dispensing device. The method comprises a step in which at least one surface to be treated of at least one part of the device in contact with the fluid product is subjected to ion implantation modification using multi-energy and multi-charged ion beams, said modified surface to be treated having barrier properties preventing interactions between the fluid product and the modified treatment surface. The multi-charged ions are selected from among helium, boron, carbon, nitrogen, oxygen, neon, argon, krypton and xenon, and the ion implantation is performed at a depth of between 0 and 3 µm.

IPC 8 full level

**C23C 14/48** (2006.01); **A61F 9/00** (2006.01); **A61J 1/00** (2006.01); **A61L 2/16** (2006.01); **A61M 11/00** (2006.01); **A61M 15/00** (2006.01);  
**B05B 11/00** (2006.01); **B65D 1/00** (2006.01); **C08J 7/18** (2006.01); **H01J 37/317** (2006.01)

CPC (source: EP US)

**A61L 2/14** (2013.01 - EP US); **B05D 5/00** (2013.01 - US); **B05D 5/08** (2013.01 - US); **C03C 23/0055** (2013.01 - EP US);  
**C08J 7/123** (2013.01 - EP US); **C23C 14/48** (2013.01 - EP US); **C23C 14/56** (2013.01 - US); **A61M 15/009** (2013.01 - EP US);  
**A61M 2205/0233** (2013.01 - EP US)

Citation (search report)

See references of WO 2012001328A2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

**WO 2012001328 A2 20120105**; **WO 2012001328 A3 20120329**; CN 103097573 A 20130508; EP 2588641 A2 20130508;  
JP 2013532038 A 20130815; US 2015299846 A1 20151022

DOCDB simple family (application)

**FR 2011051548 W 20110701**; CN 201180037698 A 20110701; EP 11741628 A 20110701; JP 2013517465 A 20110701;  
US 201113807862 A 20110701