

## Title (en)

FUEL INJECTION NOZZLE FOR INTERNAL COMBUSTION ENGINE, NOZZLE BLANK AND MANUFACTURING METHOD THEREOF

## Title (de)

BRENNSTOFFINJEKTIONS DÜSE FÜR EINEN VERBRENNUNGSMOTOR, DÜSENROHLING UND HERSTELLUNGSVERFAHREN DAFÜR

## Title (fr)

BUSE D'INJECTION DE CARBURANT POUR MOTEUR À COMBUSTION INTERNE, ÉBAUCHE DE BUSE ET SON PROCÉDÉ DE FABRICATION

## Publication

**EP 2450557 A4 20140611 (EN)**

## Application

**EP 10794146 A 20100629**

## Priority

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- JP 2009155823 A 20090630

## Abstract (en)

[origin: EP2450557A1] Provided are a fuel injection nozzle for an internal combustion engine, a nozzle blank, and a manufacturing method for the nozzle blank, wherein the production processes are simple, the productivity is high, and the production can be performed at a low cost and with a high precision. A fuel injection nozzle for an internal combustion engine has a two layer structure of different materials, comprised of a nozzle body and a nozzle tip outer surface member which is arranged to cover a tip outer surface side of the nozzle body. The nozzle body is formed of a mold which has been molded into a predetermined shape by a metal powder injection molding method and which has been subjected to degreasing to obtain a degreased body forming the nozzle body. Likewise, separately, the nozzle tip outer surface member is formed of a mold which has been molded into a predetermined shape by a metal powder injection molding method and which has been subjected to degreasing to obtain a degreased body forming the nozzle tip outer surface member. The degreased body forming the nozzle tip outer surface member is superimposed on the degreased body forming the nozzle body to cover the tip outer surface side of the degreased body forming the nozzle body and is subjected to diffusion sintering to thereby integrally unite them. It is preferable that a hot isostatic pressing operation be performed after the diffusion sintering.

## IPC 8 full level

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## CPC (source: EP KR)

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## Citation (search report)

- [YA] WO 2004031571 A1 20040415 - MAN B & W DIESEL AS [DK], et al
- [Y] WO 2007097583 A1 20070830 - HPM TECHNOLOGY CO LTD [KR], et al
- [YA] WO 2004030850 A1 20040415 - MAN B & W DIESEL AS [DK], et al
- [A] DE 10042956 A1 20020321 - SIEMENS AG [DE]
- See references of WO 2011001977A1

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