

Title (en)

Heat resistant alloy for exhaust valves durable at 900°C and exhaust valves made for the alloy

Title (de)

Hitzbeständige Legierung für bei 900°C nachhaltige Auslassventile und Auslassventile aus dieser Legierung

Title (fr)

Alliage résistant aux températures élevées pour soupapes d'échappement durables à 900°C et soupapes d'échappement fabriquées dans cet alliage

Publication

EP 1696108 A1 20060830 (EN)

Application

EP 06000958 A 20060117

Priority

- JP 2005012030 A 20050119
- JP 2005341574 A 20051128

Abstract (en)

An exhaust valve for automobile engines, which is durable at such a high temperature as 900°C, and exhibits high fatigue strength and high oxidation resistance is disclosed. The exhaust valve is made of a Ni-based alloy consisting essentially of, by weight %, C: 0.01-0.15%, Si: up to 2.0%, Mn: up to 1.0%, P: up to 0.02%, S: up to 0.01%, Co: 0.1-15%, Cr: 15-25%, one or two of Mo: 0.1-10% and W: 0.1-5% in such amount that Mo+1/2W: 3-10%, Al: 1.0-3.0%, Ti: 2.0-3.5%, provided that, by atomic %, Al+Ti: 6.3-8.5% and Ti/Al ratio: 0.4-0.8, and further, by weight %, B: 0.001-0.01%, Fe: up to 3%, and the balance of Ni and inevitable impurities by hot forging to give the form of an exhaust valve and subjecting to solid solution at 1000-1200°C and aging at 700-950°C

IPC 8 full level

F01L 3/02 (2006.01); **B21J 9/08** (2006.01); **C22C 19/05** (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP US)

B21K 1/22 (2013.01 - EP US); **C22C 19/055** (2013.01 - EP US); **C22C 19/057** (2013.01 - EP US); **C22F 1/10** (2013.01 - EP US); **F01L 3/02** (2013.01 - EP US); **F01L 2301/00** (2020.05 - EP US); **F01L 2303/00** (2020.05 - EP US)

Citation (search report)

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