

Title (en)

Martensitic hardenable heat treatable steel with improved thermal resistance and ductility

Title (de)

Martensitisch-härtbarer Vergütungsstahl mit verbesserter Warmfestigkeit und Duktilität

Title (fr)

Acier de traitement thermique durcissable martensitique à résistance thermique améliorée et à ductilité améliorée

Publication

EP 1158067 B1 20071017 (DE)

Application

EP 01108810 A 20010407

Priority

DE 10025808 A 20000524

Abstract (en)

[origin: EP1158067A1] Heat-treatable steel contains (in weight %): 9-13 Cr, 0.001-0.25 Mn, 2-7 Ni, 0.001-8 Co, 0.5-4 of at least one of W and Mo, 0.5-0.8 V, 0.001-0.1 of at least one of Nb, Ta, Zr and Hf, 0.001-0.05 Ti, 0.001-0.15 Si, 0.01-0.1 C, 0.12-0.18 N, maximum 0.025 P, maximum 0.015 S, maximum 0.01 Al, maximum 0.0012 Sb, maximum 0.007 Sn, maximum 0.012 As and a balance of iron. The weight ratio of vanadium to nitrogen is 3.5 to 4.2. An Independent claim is also included for a process heat treating the above heat-treatable steel comprising solution annealing at 1050-1250 degrees C; cooling to less than 300 degrees C; tempering and partially or completely re-austenizing at 600-900 degrees C; cooling to less than 300 degrees C; and annealing at 550-650 degrees C.

IPC 8 full level

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CPC (source: EP US)

C21D 6/004 (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/52** (2013.01 - EP US); **C21D 6/02** (2013.01 - EP US)

Cited by

CN108546883A; CN110846563A; US8147748B2; WO2008116582A1; WO2008119638A1; EP2116626A1; US7686898B2

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