

Title (en)

METHOD FOR THE PRODUCTION OF NITROGEN ALLOYED STEEL, SPRAY COMPACTED STEEL

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES STICKSTOFFLEGIERTEN, SPRÜHKOMPAKTIERTEN STAHL, VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

PROCEDE DE PRODUCTION D'UN ACIER ALLIE A L'AZOTE, COMPACTE PAR PULVERISATION

Publication

EP 1274872 B1 20041006 (DE)

Application

EP 01933846 A 20010418

Priority

- DE 10019042 A 20000418
- EP 0104377 W 20010418

Abstract (en)

[origin: WO0179575A1] The invention concerns a nitrogen alloyed steel with higher wear resistance, which is produced by means of spray compacting and has the following composition (in mass/percentage): C: 0.8 2.5 %; N: 0.03 0.75 %; Si: 0.15 1.8 %; Mn: \leq 1.0 %; P: \leq 0.03 %; S: \leq 0.05 %; Cr: 4.0 11.5 %; Mo: 0.5 6.0 %; V: \leq 4.0 %, Nb: \leq 4.0 %; W: \leq 3.5 %; O₂: \leq 0.005 %, optionally other alloy components and iron and usual impurities as radicals. The chemical composition is optimized in such a manner that the carbide/carbon nitride forming elements fulfill wear factor SV and the silicium-nitrogen ratio VSiN for minimizing residual austenite content is complied with. The invention also relates to a method for producing said steel and a composite material that is produced using the steel disclosed in the invention. The inventive steel material exhibits improved wear resistance and shape preservation.

IPC 1-7

C22C 38/00; **C22C 33/02**; **B22F 3/115**; **C23C 4/12**; **B22D 23/00**

IPC 8 full level

C21D 6/00 (2006.01); **B22D 23/00** (2006.01); **B22F 3/115** (2006.01); **C22C 1/10** (2006.01); **C22C 33/02** (2006.01); **C22C 33/04** (2006.01); **C22C 38/00** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/36** (2006.01); **C22C 38/60** (2006.01); **C23C 4/12** (2006.01); **C23C 4/123** (2016.01)

CPC (source: EP US)

B22D 23/003 (2013.01 - EP US); **C22C 1/1042** (2013.01 - EP US); **C22C 33/0285** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP US); **C22C 38/26** (2013.01 - EP US); **C22C 38/36** (2013.01 - EP US); **C23C 4/123** (2016.01 - EP US); **B22F 2999/00** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

WO 0179575 A1 20011025; AT E278816 T1 20041015; DE 10019042 A1 20011108; DE 50103992 D1 20041111; DK 1274872 T3 20050207; EP 1274872 A1 20030115; EP 1274872 B1 20041006; ES 2230308 T3 20050501; JP 2004501276 A 20040115; US 2003156965 A1 20030821

DOCDB simple family (application)

EP 0104377 W 20010418; AT 01933846 T 20010418; DE 10019042 A 20000418; DE 50103992 T 20010418; DK 01933846 T 20010418; EP 01933846 A 20010418; ES 01933846 T 20010418; JP 2001576958 A 20010418; US 24088603 A 20030218