

Title (en)

STEEL PRODUCT USABLE AT LOW TEMPERATURE AND METHOD FOR PRODUCTION THEREOF

Title (de)

BEI NIEDRIGER TEMPERATUR VERWENDBARES STAHLPRODUKT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

PRODUIT DE TYPE ACIER UTILISABLE À BASSE TEMPÉRATURE ET PROCÉDÉ POUR LA PRODUCTION DE CELUI-CI

Publication

EP 1942203 A1 20080709 (EN)

Application

EP 06702620 A 20060113

Priority

- JP 2006300339 W 20060113
- JP 2005274222 A 20050921

Abstract (en)

Provided are a steel product having a Ni content less than the 9% Ni steel and exhibiting equivalent properties to those of the 9% Ni steel; and a method for producing the said steel product. The above steel product is a steel product usable at a low temperature, characterized in that it has a chemical composition, by mass percent, of C: 0.01 to 0.1%, Si: 0.005 to 0.6%, Mn: 0.3 to 2%, Ni: more than 6% to less than 8%, sol.Al: 0.005 to 0.05%, N: 0.0005 to 0.005% and the balance: Fe and impurities, with the proviso that the following formula (1): $20C + 2.4Mn + Ni \neq 10 \cdots (1)$, is satisfied; it contains austenite of 1.7% or more in area ratio or it further contains cementite. The said austenite has an aspect ratio of 3.5 or less in average and an average circle-equivalent grain diameter of 1.0 μm or less and /or the said cementite has an aspect ratio of 5.0 or less in average and an average circle-equivalent diameter of 0.6 μm or less. The steel product may further contain one or more selected from among Mo, Cu, Cr, V, Nb, Ti, B, Ca and Mg.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 1/25** (2006.01); **C21D 6/00** (2006.01); **C21D 7/13** (2006.01); **C21D 8/02** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/08** (2006.01)

CPC (source: EP KR)

C21D 1/25 (2013.01 - EP); **C21D 6/008** (2013.01 - EP); **C21D 7/13** (2013.01 - EP); **C21D 8/02** (2013.01 - EP KR); **C22C 38/001** (2013.01 - EP); **C22C 38/02** (2013.01 - EP); **C22C 38/04** (2013.01 - EP); **C22C 38/06** (2013.01 - EP); **C22C 38/08** (2013.01 - EP KR); **C21D 2211/001** (2013.01 - EP); **C21D 2211/003** (2013.01 - EP)

Cited by

CN111263828A; EP2871255A4; CN104278210A; EP2889391A4; BE1021357B1; EP3418411A4; CN111433383A; CN102985576A; US2013098514A1; US8882942B2; EP2876179A4; US9499890B1; BE1021749B1; US11434557B2; US11591679B2; US8899094B1; US9260771B2

Designated contracting state (EPC)

BE DE FR

DOCDB simple family (publication)

EP 1942203 A1 20080709; **EP 1942203 A4 20121226**; **EP 1942203 B1 20140813**; **EP 1942203 B9 20150304**; JP 4872917 B2 20120208; JP WO2007034576 A1 20090319; KR 100984413 B1 20100929; KR 20080038226 A 20080502; WO 2007034576 A1 20070329

DOCDB simple family (application)

EP 06702620 A 20060113; JP 2006300339 W 20060113; JP 2007536391 A 20060113; KR 20087006436 A 20060113