

Title (en)
WEAR-RESISTANT STEEL SHEET HAVING EXCELLENT TOUGHNESS

Title (de)
VERSCHLEISSFESTES STAHLBLECH MIT AUSGEZEICHNETER ZÄHIGKEIT

Title (fr)
TÔLE D'ACIER RÉSISTANTE À L'USURE PRÉSENTANT UNE EXCELLENTE TÉNACITÉ

Publication
EP 3674432 A4 20201216 (EN)

Application
EP 17922610 A 20170825

Priority
JP 2017030614 W 20170825

Abstract (en)
[origin: EP3674432A1] To achieve both the "wear resistance" and the "toughness" to high levels for a non-tempered material. A steel sheet: having a chemical composition containing, in terms of percentage by mass, from 0.60 to 1.25% of C, 0.50% or less of Si, from 0.30 to 1.20% of Mn, 0.030% or less of P, 0.030% or less of S, from 0.30 to 1.50% of Cr, from 0.10 to 0.50% of Nb, from 0 to 0.50% of Ti, from 0 to 0.50% of Mo, from 0 to 0.50% of V, from 0 to 2.00% of Ni, and the balance of Fe, with unavoidable impurities; having a metal structure containing a ferrite phase as a metal matrix having dispersed therein cementite particles and particles of a carbide containing one or more kind of Nb and Ti (which may be hereinafter referred to as a "Nb-Ti based carbide"); and having, on a cross sectional surface in parallel to a rolling direction and a thickness direction (i.e., an L cross section), a number density of the Nb-Ti based carbide particles having a circle equivalent diameter of 0.5 μm or more of from 3,000 to 9,000 per mm^2 and a number density of voids having a circle equivalent diameter of 1.0 μm or more of 1,250 per mm^2 or less.

IPC 8 full level
C21D 9/46 (2006.01); **C22C 38/00** (2006.01); **C22C 38/04** (2006.01); **C22C 38/50** (2006.01)

CPC (source: EP KR US)
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Citation (search report)

- [E] JP 2017190494 A 20171019 - NISSHIN STEEL CO LTD
- [Y] JP 2015190037 A 20151102 - NISSHIN STEEL CO LTD
- [Y] JP 2011012316 A 20110120 - NIPPON STEEL CORP
- [E] EP 3323904 A1 20180523 - NISSHIN STEEL CO LTD [JP]
- [A] JP 2015190036 A 20151102 - NISSHIN STEEL CO LTD
- [A] JP 2016222990 A 20161228 - NIPPON STEEL & SUMITOMO METAL CORP
- See references of WO 2019038923A1

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