

Title (en)  
HIGH-HARDNESS STEEL PRODUCT AND METHOD OF MANUFACTURING THE SAME

Title (de)  
HOCHHARTES STAHLPRODUKT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)  
PRODUIT D'ACIER À DURETÉ ÉLEVÉE ET SON PROCÉDÉ DE FABRICATION

Publication  
**EP 3719149 A1 20201007 (EN)**

Application  
**EP 19185759 A 20190711**

Priority  
EP 19167552 A 20190405

Abstract (en)  
A hot-rolled steel strip product comprising a composition consisting of, in terms of weight percentages, 0.14 % to 0.35 % C, 0 % to 0.5 % Si, 0.05 % to 0.40 % Mn, 0.1 % or less Al, 0.1 % to 0.4 % Cu, 0.2 % to 0.9 % Ni, 0.2 % to 0.9 % Cr, 0.2 % or less Mo, 0.005 % or less Nb, 0.035 % or less Ti, 0.05 % or less V, 0.0005 % to 0.0050 % B, 0.025 % or less P, 0.008 % or less S, 0.01 % or less N, 0.01 % or less Ca, and the remainder being Fe and inevitable impurities, wherein the steel product has a Brinell hardness in the range of 420 to 580 HBW.

IPC 8 full level  
**C21D 8/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP KR US)  
**C21D 1/00** (2013.01 - EP); **C21D 6/004** (2013.01 - US); **C21D 6/005** (2013.01 - US); **C21D 6/008** (2013.01 - US); **C21D 8/0205** (2013.01 - US); **C21D 8/0226** (2013.01 - EP KR US); **C21D 8/0263** (2013.01 - EP US); **C21D 8/0273** (2013.01 - KR); **C21D 9/52** (2013.01 - US); **C22C 38/001** (2013.01 - KR US); **C22C 38/002** (2013.01 - US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - US); **C22C 38/08** (2013.01 - EP); **C22C 38/105** (2013.01 - EP); **C22C 38/12** (2013.01 - EP); **C22C 38/14** (2013.01 - EP); **C22C 38/16** (2013.01 - EP); **C22C 38/20** (2013.01 - US); **C22C 38/22** (2013.01 - US); **C22C 38/24** (2013.01 - US); **C22C 38/26** (2013.01 - US); **C22C 38/28** (2013.01 - US); **C22C 38/42** (2013.01 - EP KR US); **C22C 38/44** (2013.01 - EP KR US); **C22C 38/46** (2013.01 - KR US); **C22C 38/48** (2013.01 - KR US); **C22C 38/50** (2013.01 - KR US); **C22C 38/54** (2013.01 - EP KR US); **C21D 2211/008** (2013.01 - EP KR)

Citation (applicant)  
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Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3719148 A1 20201007; EP 3719148 B1 20230125**; BR 112021019860 A2 20211207; BR 112021019865 A2 20211207; CA 3135141 A1 20201008; CA 3135144 A1 20201008; CN 113785078 A 20211210; CN 113785079 B 20231027; CN 113785079 A 20211210; CN 113785079 B 20240405; EP 3719149 A1 20201007; EP 3719149 B1 20230322; JP 2022528420 A 20220610; KR 20210149123 A 20211208; PL 3719148 T3 20230508; SI 3719148 T1 20230630; US 2022177996 A1 20220609; US 2022177997 A1 20220609; WO 2020201437 A1 20201008; WO 2020201438 A1 20201008

DOCDB simple family (application)  
**EP 19167552 A 20190405**; BR 112021019860 A 20200402; BR 112021019865 A 20200402; CA 3135141 A 20200402; CA 3135144 A 20200402; CN 202080026935 A 20200402; CN 202080026939 A 20200402; EP 19185759 A 20190711; EP 2020059423 W 20200402; EP 2020059424 W 20200402; JP 2021559152 A 20200402; KR 20217035749 A 20200402; PL 19167552 T 20190405; SI 201930516 T 20190405; US 202017601227 A 20200402; US 202017601234 A 20200402