

Title (en)

HIGH-TENSILE MANGANESE STEEL CONTAINING ALUMINIUM, METHOD FOR PRODUCING A SHEET-STEEL PRODUCT FROM SAID STEEL AND SHEET-STEEL PRODUCT PRODUCED ACCORDING TO THIS METHOD

Title (de)

HOCHFESTER ALUMINIUMHALTIGER MANGANSTAHL, EIN VERFAHREN ZUR HERSTELLUNG EINES STAHLFLACHPRODUKTS AUS DIESEM STAHL UND HIERNACH HERGESTELLTES STAHLFLACHPRODUKT

Title (fr)

ACIER AU MANGANESE À HAUTE RÉSISTANCE CONTENANT DE L'ALUMINIUM, PROCÉDÉ DE FABRICATION D'UN PRODUIT PLAT EN ACIER À PARTIR DE CET ACIER ET PRODUIT PLAT EN ACIER FABRIQUÉ D'APRÈS CELUI-CI

Publication

**EP 3332046 B1 20210224 (DE)**

Application

**EP 16747515 A 20160803**

Priority

- DE 102015112886 A 20150805
- EP 2016068564 W 20160803

Abstract (en)

[origin: WO2017021459A1] The invention relates to a high-tensile manganese steel containing aluminium, said steel having the following chemical composition (in % by weight): C: 0.01 to < 0.3; Mn: 4 to < 10; Al: > 1 to 4; Si: 0.01 to 1; Cr: 0.1 to 4; Mo: 0.02 to 1; P: < 0.1; S: < 0.1; N: < 0.3; the remainder being iron with unavoidable elemental inclusions associated with steel, and with optional alloying of one or more of the following elements (in % by weight): V: 0.01 to 1; Nb: 0.01 to 1; Ti: 0.01 to 1; Sn: 0 to 0.5; Cu: 0.005 to 3; W: 0.03 to 3; Co: 0.05 to 3; Zr: 0.03 to 0.5 and Ca: 0.0005 to 0.1. Said steel has an excellent combination of strength-, strain- and deformation characteristics. The invention also relates to a method for producing a sheet-steel product from said steel and to a sheet-steel product produced according to this method.

IPC 8 full level

**C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C21D 8/04** (2006.01); **C21D 9/48** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/12** (2006.01); **C22C 38/18** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/30** (2006.01); **C22C 38/38** (2006.01); **C23C 2/04** (2006.01); **C23C 2/40** (2006.01); **C23C 20/06** (2006.01); **C23C 26/00** (2006.01)

CPC (source: EP KR RU US)

**C21D 6/002** (2013.01 - EP US); **C21D 6/005** (2013.01 - EP KR US); **C21D 6/008** (2013.01 - EP US); **C21D 8/02** (2013.01 - RU); **C21D 8/0226** (2013.01 - EP KR US); **C21D 8/0236** (2013.01 - EP KR US); **C21D 8/0263** (2013.01 - EP KR US); **C21D 8/0426** (2013.01 - EP); **C21D 8/0436** (2013.01 - EP); **C21D 8/0463** (2013.01 - EP); **C21D 9/46** (2013.01 - EP); **C21D 9/48** (2013.01 - EP); **C22C 38/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/06** (2013.01 - EP KR US); **C22C 38/12** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP US); **C22C 38/20** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP KR US); **C22C 38/24** (2013.01 - EP KR US); **C22C 38/26** (2013.01 - EP KR US); **C22C 38/28** (2013.01 - EP US); **C22C 38/30** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP KR RU US); **C23C 2/40** (2013.01 - EP); **C25D 7/0614** (2013.01 - EP); **C21D 9/46** (2013.01 - US); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

Citation (examination)

AUTORENKOOLLEKTIV: "Spurenelemente im Stahl - Möglichkeiten zur Beeinflussung im Smelzbetrieb", SPURENELEMENTE IN STAHL, VERLAG STAHLLEISEN, DUESSELDORF, DE, 1 January 1985 (1985-01-01), pages 19 - 22, XP002433212

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

DOCDB simple family (publication)

**WO 2017021459 A1 20170209**; DE 102015112886 A1 20170209; EP 3332046 A1 20180613; EP 3332046 B1 20210224; KR 20180036731 A 20180409; RU 2018107257 A 20190905; RU 2018107257 A3 20190905; RU 2709560 C2 20191218; US 2018230579 A1 20180816

DOCDB simple family (application)

**EP 2016068564 W 20160803**; DE 102015112886 A 20150805; EP 16747515 A 20160803; KR 20187005192 A 20160803; RU 2018107257 A 20160803; US 201615749725 A 20160803