Title (en)

HIGH-MN STEEL AND METHOD FOR MANUFACTURING SAME

Title (de)

STAHL MIT HOHEM MN-GEHALT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

ACIER RICHE EN MN, ET PROCÉDÉ DE FABRICATION DE CELUI-CI

Publication

EP 3722448 A4 20201014 (EN)

Application

EP 18886695 A 20181206

Priority

- JP 2017235188 A 20171207
- JP 2018044941 W 20181206

Abstract (en)

[origin: EP3722448A1] Provided is a high-Mn steel which not only has high strength and excellent low-temperature toughness but also has excellent CTOD property at low temperatures. The high-Mn steel has a chemical composition containing, in mass%, C: 0.10 % or more and 0.70 % or less, Si: 0.05 % or more and 0.50 % or less, Mn: 20 % or more and 30 % or less, P: 0.030 % or less, S: 0.0070 % or less, Al: 0.01 % or more and 0.07 % or less, Cr: 0.5 % or more and 7.0 % or less, Ni: 0.01 % or more and less than 0.1 %, Ca: 0.0005 % or more and 0.0050 % or less, N: 0.0050 % or more and 0.0500 % or less, O: 0.0050 % or less, Ti: less than 0.0050 %, and Nb: less than 0.0050 %, the balance consisting of Fe and inevitable impurities, and a microstructure having austenite as a base phase, where the austenite has a grain size of 1 µm or more and a standard deviation of 9 µm or less.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR US)

C21D 6/005 (2013.01 - EP US); **C21D 8/02** (2013.01 - EP); **C21D 8/0205** (2013.01 - US); **C21D 8/0226** (2013.01 - KR US); **C21D 8/0273** (2013.01 - KR); **C21D 9/46** (2013.01 - US); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - KR US); **C22C 38/002** (2013.01 - US); **C22C 38/005** (2013.01 - US); **C22C 38/02** (2013.01 - US); **C22C 38/04** (2013.01 - EP); **C22C 38/06** (2013.01 - US); **C22C 38/42** (2013.01 - US); **C22C 38/44** (2013.01 - KR US); **C22C 38/46** (2013.01 - KR US); **C22C 38/48** (2013.01 - KR US); **C22C 38/50** (2013.01 - KR US); **C22C 38/58** (2013.01 - EP KR US); C21D 2211/001 (2013.01 - EP US)

Citation (search report)

- [XD] JP 2016084529 A 20160519 - NIPPON STEEL & SUMITOMO METAL CORP
- [A] JP 2017155300 A 20170907 - NIPPON STEEL & SUMITOMO METAL CORP
- [A] JP 2007126715 A 20070524 - SUMITOMO METAL IND
- [A] JP H0215148 A 19900118 - SUMITOMO METAL IND
- [A] JP 2016196703 A 20161124 - NIPPON STEEL & SUMITOMO METAL CORP
- [A] JP S56258 A 19810106 - SUMITOMO METAL IND
- See also references of WO 2019112012A1

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 3722448 A1 20201014; **EP 3722448 A4 20201014**; **EP 3722448 B1 20240306**; BR 112020011210 A2 20201117; BR 112020011210 B1 20230425; CN 111433381 A 20200717; CN 111433381 B 20210903; JP 6590117 B1 20191016; JP WO2019112012 A1 20191212; KR 102405388 B1 20220603; KR 20200088469 A 20200722; MY 192536 A 20220826; PH 12020550830 A1 20210510; SG 11202005101P A 20200629; US 2021164067 A1 20210603; WO 2019112012 A1 20190613

DOCDB simple family (application)

EP 18886695 A 20181206; BR 112020011210 A 20181206; CN 201880078458 A 20181206; JP 2018044941 W 20181206; JP 2019518131 A 20181206; KR 20207018443 A 20181206; MY PI2020002748 A 20181206; PH 12020550830 A 20200605; SG 11202005101P A 20181206; US 201816768884 A 20181206