Title (en)

HIGH-CARBON HOT-ROLLED STEEL SHEET AND METHOD FOR MANUFACTURING SAME

Title (de)

KOHLENSTOFFREICHES WARMGEWALZTES STAHLBLECH UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

TÔLE D'ACIER LAMINÉE À CHAUD À HAUTE TENEUR EN CARBONE ET SON PROCÉDÉ DE FABRICATION

Publication

EP 3901303 A4 20211103 (EN)

Application

EP 20749360 A 20200114

Priority

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- JP 2020000783 W 20200114

Abstract (en)

[origin: EP3901303A1] A high-carbon hot-rolled steel sheet and a method for manufacturing the high-carbon hot-rolled steel sheet are provided. The present invention is a high-carbon hot-rolled steel sheet having a particular chemical composition. The microstructure of the steel sheet includes ferrite, cementite, and pearlite that accounts for 6.5% or less of the entire microstructure by area fraction. Regarding the cementite, the proportion of the number of cementite grains having an equivalent circle diameter of 0.1 μm or less to the total number of cementite grains is 20% or less, the average cementite grain size is 2.5 μm or less, and the cementite accounts for 3.5% or more and 10.0% or less of the entire microstructure by area fraction. The average concentration of solute B in a region extending from a surface layer to a depth of 100 μm is 10 mass ppm or more. The average concentration of N present as AlN in the region extending from the surface layer to the depth of 100 μm is 70 mass ppm or less.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/32** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)

C21D 6/002 (2013.01 - EP); **C21D 6/004** (2013.01 - US); **C21D 6/005** (2013.01 - EP US); **C21D 6/008** (2013.01 - EP US); **C21D 8/0205** (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP KR US); **C21D 8/0263** (2013.01 - EP KR US); **C21D 8/0273** (2013.01 - KR); **C21D 9/46** (2013.01 - EP KR US); **C22C 38/001** (2013.01 - EP KR US); **C22C 38/002** (2013.01 - US); **C22C 38/008** (2013.01 - US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/20** (2013.01 - US); **C22C 38/22** (2013.01 - KR); **C22C 38/26** (2013.01 - KR US); **C22C 38/28** (2013.01 - KR US); **C22C 38/32** (2013.01 - EP KR); **C22C 38/44** (2013.01 - US); **C22C 38/46** (2013.01 - US); **C22C 38/54** (2013.01 - US); **C22C 38/60** (2013.01 - EP); C21D 2211/003 (2013.01 - EP US); C21D 2211/005 (2013.01 - EP KR US); C21D 2211/009 (2013.01 - EP KR US)

Citation (search report)

- [XA] EP 3091098 A1 20161109 - JFE STEEL CORP [JP]
- [XA] EP 3020843 A1 20160518 - JFE STEEL CORP [JP]
- [XA] EP 3091097 A1 20161109 - JFE STEEL CORP [JP]
- [XA] WO 2010106748 A1 20100923 - NIPPON STEEL CORP [JP], et al
- [A] EP 3020839 A1 20160518 - JFE STEEL CORP [JP]
- See references of WO 2020158357A1

Designated contracting state (EPC)

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BA ME

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