

Title (en)

STEEL MATERIAL AND METHOD FOR PRODUCING SAME, AND TANK AND METHOD FOR PRODUCING SAME

Title (de)

STAHLMATERIAL UND VERFAHREN ZUR HERSTELLUNG DAVON SOWIE TANK UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

MATÉRIAU D'ACIER ET SON PROCÉDÉ DE PRODUCTION, AINSI QUE RÉSERVOIR ET SON PROCÉDÉ DE PRODUCTION

Publication

EP 4249621 A4 20240605 (EN)

Application

EP 22749560 A 20220125

Priority

- JP 2021018056 A 20210208
- JP 2022002735 W 20220125

Abstract (en)

[origin: EP4249621A1] Provided are a steel material, a method for producing the steel material, a tank, and a method for producing the tank. A steel material of the present invention has a chemical composition containing, in mass%, C: 0.200% or more and 0.700% or less, Si: 0.05% or more and 1.00% or less, Mn: 20.0% or more and 40.0% or less, P: 0.030% or less, S: 0.0050% or less, Al: 5.00% or less, Cr: 7.0% or less, N: 0.0500% or less, O: 0.0050% or less, Ti: less than 0.005%, Nb: less than 0.005%, and one or two or more selected from Ca: 0.0100% or less, Mg: 0.0100% or less, and REM: 0.0200% or less, the balance being iron and incidental impurities, in which a microstructure has a maximum grain size of less than 200 µm at a position 1 mm below a surface of the steel material.

IPC 8 full level

C21D 1/18 (2006.01); **C21D 1/60** (2006.01); **C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C21D 9/00** (2006.01); **C21D 9/46** (2006.01);
C22C 38/00 (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01);
C22C 38/24 (2006.01); **C22C 38/38** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR)

B21D 51/18 (2013.01 - KR); **C21D 1/18** (2013.01 - EP); **C21D 1/60** (2013.01 - EP); **C21D 6/002** (2013.01 - EP); **C21D 6/005** (2013.01 - EP);
C21D 8/0226 (2013.01 - EP KR); **C21D 8/0263** (2013.01 - EP); **C21D 9/0068** (2013.01 - EP); **C21D 9/46** (2013.01 - EP);
C22C 38/001 (2013.01 - KR); **C22C 38/002** (2013.01 - EP); **C22C 38/005** (2013.01 - EP); **C22C 38/02** (2013.01 - EP); **C22C 38/04** (2013.01 - EP);
C22C 38/06 (2013.01 - EP KR); **C22C 38/20** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/24** (2013.01 - EP); **C22C 38/26** (2013.01 - KR);
C22C 38/28 (2013.01 - KR); **C22C 38/38** (2013.01 - EP KR); **C22C 38/44** (2013.01 - KR); **C22C 38/46** (2013.01 - KR);
C22C 38/58 (2013.01 - EP KR); **F17C 3/00** (2013.01 - KR); **C21D 2211/004** (2013.01 - EP)

Citation (search report)

- [XI] EP 3677700 A1 20200708 - JFE STEEL CORP [JP]
- [XI] EP 3553195 A1 20191016 - JFE STEEL CORP [JP]
- [XI] KR 20200047318 A 20200507 - POSCO [KR] & EP 3872216 A1 20210901 - POSCO [KR]
- [A] KR 101932496 B1 20181226
- See also references of WO 2022168686A1

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)

EP 4249621 A1 20230927; **EP 4249621 A4 20240605**; CN 116888292 A 20231013; JP 7338792 B2 20230905; JP WO2022168686 A1 20220811;
KR 20230125288 A 20230829; TW 202246537 A 20221201; WO 2022168686 A1 20220811

DOCDB simple family (application)

EP 22749560 A 20220125; CN 202280011768 A 20220125; JP 2022002735 W 20220125; JP 2022527101 A 20220125;
KR 20237025671 A 20220125; TW 111104320 A 20220207