Title (en)

CR-BASED STAINLESS STEEL HAVING EXCELLENT HYDROGEN EMBRITTLEMENT RESISTANCE

Title (de)

ROSTFREIER STAHL AUF CR-BASIS MIT AUSGEZEICHNETER WASSERSTOFFVERSPRÖDUNGSBESTÄNDIGKEIT

Title (fr)

ACIER INOXYDABLE À BASE DE CR PRÉSENTANT UNE EXCELLENTE RÉSISTANCE À LA FRAGILISATION PAR L'HYDROGÈNE

Publication

EP 3901292 A1 20211027 (EN)

Application

EP 19899311 A 20191218

Priority

- JP 2018239243 A 20181221
- JP 2019049717 W 20191218

Abstract (en)

A Cr-based stainless steel sheet with excellent hydrogen embrittlement resistance includes: 0.020 mass% or less of C; 1.00 mass% or less of Si; 1.00 mass% or less of Mn; 0.040 mass% or less of P; 0.0030 mass% or less of S; 10.0 to 18.0 mass% of Cr; 0.020 mass% or less of N; 0.10 mass % or less of Al; and one or both of 0.5 mass% or less of Nb and 0.5 mass% or less of Ti; in which a texture in a sheet surface of the Cr-based stainless steel sheet satisfies (i) and (ii) below. (i) In the sheet surface, an area ratio of crystal grains ({211}±10-degree-oriented grains) whose orientation difference between a normal direction of a surface of the steel sheet and a {211}-plane orientation is 10 degrees or less is less than 30%. (ii) For the {211}±10-degree-oriented grains, a length in a rolling direction and a length in a sheet width direction are each less than 0.15 mm on average.

IPC 8 full level

C21D 9/46 (2006.01); **C22C 38/00** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)

C21D 1/26 (2013.01 - EP); **C21D 6/002** (2013.01 - EP); **C21D 6/004** (2013.01 - US); **C21D 6/005** (2013.01 - US); **C21D 6/007** (2013.01 - US); **C21D 6/008** (2013.01 - US); **C21D 8/0205** (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP); **C21D 8/0236** (2013.01 - EP US); **C21D 8/0247** (2013.01 - EP); **C21D 8/0263** (2013.01 - EP); **C21D 8/0273** (2013.01 - EP); **C21D 9/46** (2013.01 - EP KR US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/004** (2013.01 - EP); **C22C 38/005** (2013.01 - EP US); **C22C 38/008** (2013.01 - EP); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/18** (2013.01 - US); **C22C 38/20** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/24** (2013.01 - EP); **C22C 38/26** (2013.01 - EP); **C22C 38/28** (2013.01 - EP); **C22C 38/30** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP); **C22C 38/40** (2013.01 - EP); **C22C 38/42** (2013.01 - EP KR US); **C22C 38/44** (2013.01 - EP KR US); **C22C 38/46** (2013.01 - EP KR US); **C22C 38/48** (2013.01 - US); **C22C 38/50** (2013.01 - KR US); **C22C 38/52** (2013.01 - KR); **C22C 38/54** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP); C21D 2201/05 (2013.01 - EP)

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 3901292 A1 20211027; **EP 3901292 A4 20221123**; CN 113227414 A 20210806; CN 113227414 B 20230811; JP 7121142 B2 20220817; JP WO2020130060 A1 20211014; KR 102539588 B1 20230601; KR 20210092292 A 20210723; US 2022033944 A1 20220203; WO 2020130060 A1 20200625

DOCDB simple family (application)

EP 19899311 A 20191218; CN 201980083521 A 20191218; JP 2019049717 W 20191218; JP 2020561497 A 20191218; KR 20217018922 A 20191218; US 201917312693 A 20191218