Title (en)

MARTENSITIC STAINLESS STEEL MATERIAL

Title (de)

MARTENSITISCHES EDELSTAHLMATERIAL

Title (fr)

MATÉRIAU EN ACIER INOXYDABLE MARTENSITIQUE

Publication

EP 4227425 A1 20230816 (EN)

Application

EP 21877705 A 20211007

Priority

- JP 2020170658 A 20201008
- JP 2020170659 A 20201008
- JP 2021037135 W 20211007

Abstract (en)

A martensitic stainless steel material that has high strength and is excellent in SSC resistance is provided. A martensitic stainless steel material according to the present disclosure contains, in mass%, C: 0.030% or less, Ni: 5.00 to 7.00%, Cr: 10.00 to 14.00%, Mo: 1.50 to 3.00%, and Cu: more than 1.00 to 3.50%, and has a yield strength of 758 MPa or more. On two line segments LS of 1000 μm extending in a wall thickness direction with arbitrary two points as a center located at positions at a depth of 2 mm from the inner surface, respectively, a degree of Cr segregation ΔCr defined by Formula (1) described in the description, a degree of Mo segregation ΔMo defined by Formula (2) described in the description, and a degree of Cu segregation ΔCu defined by Formula (3) described in the description satisfy Formula (4): ΔCr+ΔMo+ΔCu≤A where, when the yield strength is 758 to less than 862 MPa, A in Formula (4) is 0.70, and when the yield strength is 862 MPa or more, A in Formula (4) is 0.50.

IPC 8 full level

C21D 8/06 (2006.01); **C21D 8/10** (2006.01); **C21D 9/00** (2006.01); **C21D 9/08** (2006.01); **C22C 38/00** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP US)

C21D 1/18 (2013.01 - EP); **C21D 1/25** (2013.01 - EP); **C21D 1/26** (2013.01 - EP); **C21D 6/004** (2013.01 - EP US); **C21D 6/005** (2013.01 - US); **C21D 6/007** (2013.01 - US); **C21D 6/008** (2013.01 - US); **C21D 8/065** (2013.01 - EP); **C21D 8/105** (2013.01 - EP US); **C21D 9/0075** (2013.01 - EP); **C21D 9/085** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/004** (2013.01 - EP US); **C22C 38/005** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/52** (2013.01 - EP US); **C22C 38/54** (2013.01 - EP US); C21D 2211/008 (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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4227425 A1 20230816; **EP 4227425 A4 20240417**; JP 7173405 B2 20221116; JP WO2022075406 A1 20220414; US 2023366071 A1 20231116; WO 2022075406 A1 20220414

DOCDB simple family (application)

EP 21877705 A 20211007; JP 2021037135 W 20211007; JP 2022519989 A 20211007; US 202118245564 A 20211007