

Title (en)
Ferritic stainless steel with 19% of chromium stabilised with niobium

Title (de)
Ferritischer Edelstahl mit 19 % Chrom, der mit Niob stabilisiert ist

Title (fr)
Acier inoxydable ferritique dit a 19% de chrome stabilisé au niobium

Publication
EP 1818422 A1 20070815 (FR)

Application
EP 07290039 A 20070111

Priority
• EP 06290231 A 20060208
• EP 07290039 A 20070111

Abstract (en)
Ferritic stainless steel sheet composition comprises (in wt.%) carbon (= 0.03), manganese (= 1), silicon (0.3-1), sulfur (= 0.01), phosphorous (/ ~0.04), chromium (18-22), nickel (= 0.5), molybdenum (= 2.5), copper (= 0.5), titanium (= 0.02), zirconium (= 0.02), aluminum (= 0.02), niobium (0.2-1), vanadium (0.2), nitrogen (= 0.03), cobalt (0.005-0.05), tin (= 0.05), in which the sum of titanium, aluminum and zirconium is = 0.03 wt. % and the rest of the composition is constituted by iron and unavoidable impurities resulting from the development. Ferritic stainless steel sheet composition comprises (in wt.%) carbon (= 0.03), manganese (= 1), silicon (0.3-1), sulfur (= 0.01), phosphorous (/~0.04), chromium (18-22), nickel (= 0.5), molybdenum (= 2.5), copper (= 0.5), titanium (= 0.02), zirconium (= 0.02), aluminum (= 0.02), niobium (0.2-1), vanadium (0.2), nitrogen (= 0.03), cobalt (0.005-0.05), tin (= 0.05), in which the sum of titanium, aluminum and zirconium is = 0.03 wt.% the contents of chromium, silicon, molybdenum, niobium, carbon, nitrogen, vanadium and titanium satisfy the formula given in the specification and the rest of the composition is constituted by iron and unavoidable impurities resulting from the development. Independent claims are included for: (1) preparation of the ferritic stainless steel sheet, comprising supplying the steel composition, proceeds casting semi-finished product from the steel, raising the temperature of the semi-finished product to greater than 1000[deg] C, hot roll of the semi-finished product to obtain a hot rolled sheet, cold roll of the sheet and reheating the cold rolled sheet at 1030-1130[deg] C for 10 seconds to 3 minutes, to obtain a structure completely recrystallized with a ferritic particle grain size of 10-60 mu m; and (2) preparation of a part comprising providing the stainless ferritic steel sheet, shaping the sheet to obtain the part and subjecting the part to thermal cycles at 650-1050[deg] C for higher than 30 minutes.

Abstract (fr)
Tôle d'acier inoxydable ferritique, dit à 19%Cr, dont la composition comprend, les teneurs étant exprimées en poids: C # 0,03%, Mn# 1%, 0, 3# Si# 1%, S# 0,01%, P# 0,04%, 18%# Cr # 22%, Ni # 0,5%, Mo # 2,5%, Cu# 0,5%, Ti# 0,02%, Zr# 0,02%, Al# 0,02%, 0,2%# Nb# 1%, V# 0,2%, N :50,03%, 0,005% # Co# 0,05%, Sn# 0,05%, étant entendu que : Ti + Al + Zr # 0,030%, Cr + 5 Si #¥ 20%, Mo+3 (Nb- 7C- 7N) #¥ 1,5%, V +10 Ti #¥ 0,06%, le reste de la composition étant constitué de fer et d'impuretés inévitables résultant de l'élaboration

IPC 8 full level
C22C 38/26 (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/28** (2006.01); **C22C 38/30** (2006.01)

CPC (source: EP)
C21D 6/002 (2013.01); **C21D 8/0273** (2013.01); **C21D 9/0068** (2013.01); **C22C 38/001** (2013.01); **C22C 38/008** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/20** (2013.01); **C22C 38/22** (2013.01); **C22C 38/24** (2013.01); **C22C 38/26** (2013.01); **C22C 38/30** (2013.01); **C22C 38/44** (2013.01); **C22C 38/46** (2013.01); **C22C 38/48** (2013.01); **C22C 38/52** (2013.01); **C21D 2211/004** (2013.01); **C21D 2211/005** (2013.01); **F01N 13/10** (2013.01); **F01N 13/16** (2013.01); **F01N 2530/04** (2013.01)

Citation (search report)
• [A] EP 1083241 A1 20010314 - UGINE SA [FR]
• [A] EP 1170392 A1 20020109 - KAWASAKI STEEL CO [JP]
• [A] US 4726853 A 19880223 - GRESSION PASCAL [FR], et al
• [A] EP 0478790 A1 19920408 - NISSHIN STEEL CO LTD [JP]
• [A] US 4010049 A 19770301 - RAREY CHARLES R

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US2017275723A1; CN114364820A; US11384405B2; WO2014033372A1; US10752973B2; EP3670692A1; WO2020127275A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA HR MK YU

DOCDB simple family (publication)
EP 1818421 A1 20070815; AT E417134 T1 20081215; DE 602007000326 D1 20090122; DK 1818422 T3 20090223; DK 1818422 T4 20121029; EP 1818422 A1 20070815; EP 1818422 B1 20081210; EP 1818422 B2 20120718; ES 2317629 T3 20090416; ES 2317629 T5 20121226; PT 1818422 E 20090130; SI 1818422 T1 20090430; SI 1818422 T2 20121130

DOCDB simple family (application)
EP 06290231 A 20060208; AT 07290039 T 20070111; DE 602007000326 T 20070111; DK 07290039 T 20070111; EP 07290039 A 20070111; ES 07290039 T 20070111; PT 07290039 T 20070111; SI 200730015 T 20070111