

Title (en)

NICKEL-CHROMIUM ALLOY WITH GOOD FORMABILITY, CREEP STRENGTH AND CORROSION RESISTANCE

Title (de)

NICKEL-CHROM-LEGIERUNG MIT GUTER VERARBEITBARKEIT, KRIECHFESTIGKEIT UND KORROSIONSBESTÄNDIGKEIT

Title (fr)

ALLIAGE NICKEL-CHROME AVEC BONNE FORMABILITÉ, LA RÉSISTANCE AU FLUAGE ET À LA CORROSION

Publication

**EP 2855724 B1 20160914 (DE)**

Application

**EP 13731274 A 20130515**

Priority

- DE 102012011162 A 20120605
- DE 2013000269 W 20130515

Abstract (en)

[origin: WO2013182178A1] The invention relates to a nickel-chromium alloy comprising (in wt.-%) 29 to 37% chromium, 0.001 to 1.8% aluminum, 0.10 to 7.0% iron, 0.001 to 0.50% silicon, 0.005 to 2.0% manganese, 0.00 to 1.00% titanium and/or 0.00 to 1.10% niobium, 0.0002 to 0.05% each of magnesium and/or calcium, 0.005 to 12% carbon, 0.001 to 0.050% nitrogen, 0.001 to 0.030% phosphorus, 0.0001 to 0.020% oxygen, not more than 0.010% sulfur, not more than 2.0% molybdenum, not more than 2.0% tungsten, the remainder nickel and the usual process-related impurities, wherein the following relations must be satisfied:  $Cr + Al \geq 30$  (2a) and  $Fp \leq 39.9$  (3a) with  $Fp = Cr + 0.272 \cdot Fe + 2.36 \cdot Al + 2.22 \cdot Si + 2.48 \cdot Ti + 0.374 \cdot Mo + 0.538 \cdot W - 11.8 \cdot C$  (4a), wherein Cr, Fe, Al, Si, Ti, Mo, W and C is the concentration of the respective elements in % by mass.

IPC 8 full level

**C22C 19/05** (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP US)

**C22C 19/053** (2013.01 - EP US); **C22C 19/055** (2013.01 - EP US); **C22C 19/058** (2013.01 - EP US); **C22C 30/00** (2013.01 - EP US); **C22F 1/10** (2013.01 - EP US)

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)

**DE 102012011162 A1 20131205**; **DE 102012011162 B4 20140522**; BR 112014023691 B1 20190625; CN 104245977 A 20141224; CN 104245977 B 20160706; EP 2855724 A1 20150408; EP 2855724 B1 20160914; ES 2605949 T3 20170317; JP 2015520300 A 20150716; JP 6177317 B2 20170809; KR 101698075 B1 20170119; KR 20150006871 A 20150119; MX 2014014555 A 20150706; MX 369312 B 20191105; RU 2014153533 A 20160810; RU 2605022 C1 20161220; US 2015093288 A1 20150402; US 9650698 B2 20170516; WO 2013182178 A1 20131212

DOCDB simple family (application)

**DE 102012011162 A 20120605**; BR 112014023691 A 20130515; CN 201380015120 A 20130515; DE 2013000269 W 20130515; EP 13731274 A 20130515; ES 13731274 T 20130515; JP 2015515390 A 20130515; KR 20147033611 A 20130515; MX 2014014555 A 20130515; RU 2014153533 A 20130515; US 201314389497 A 20130515