

Title (en)
NICKEL-CHROMIUM-ALUMINUM ALLOY WITH GOOD PROCESSABILITY, CREEP RESISTANCE, AND CORROSION RESISTANCE, AND USE THEREOF

Title (de)
NICKEL-CHROM-ALUMINIUM-LEGIERUNG MIT GUTER VERARBEITBARKEIT, KRIECHFESTIGKEIT UND KORROSIONSBESTÄNDIGKEIT SOWIE DEREN VERWENDUNG

Title (fr)
ALLIAGE DE NICKEL-CHROME-ALUMINIUM PRÉSENTANT DE BONNES APTITUDE AU TRAITEMENT, RÉSISTANCE AU FLUAGE ET RÉSISTANCE À LA CORROSION ET SON UTILISATION

Publication
EP 4069873 A1 20221012 (DE)

Application
EP 20839221 A 20201204

Priority

- DE 102019133293 A 20191206
- DE 102020132219 A 20201203
- DE 2020101026 W 20201204

Abstract (en)
[origin: WO2021110218A1] The invention relates to a nickel-chromium-aluminum alloy comprising (in mass %) 12 to 30% chromium, 1.8 to 4.0% aluminum, 0.1 to 7.0% iron, 0.001 to 0.50% silicon, 0.001 to 2.0% manganese, 0.00 to 1.00% titanium, 0.00 to 1.10% niobium, 0.00 to 0.5% copper, 0.00 to 5.00% cobalt, in each case 0.0002 to 0.05% magnesium and/or calcium, 0.001 to 0.12% carbon, 0.001 to 0.050% nitrogen, 0.001 to 0.030% phosphorus, 0.0001 to 0.020% oxygen, max. 0.010% sulfur, max. 2.0% molybdenum, max. 2.0% tungsten, and a remainder of nickel with a minimum content of $\geq 50\%$ and the usual process-related impurities for use in solar power towers, using chloride and/or carbonate salt melts as a heat transfer medium, wherein in order to ensure a good processability, the following condition must be met: $F_v \geq 0.9$ mit $F_v = 4.88050 - 0.095546 \cdot Fe - 0.0178784 \cdot Cr - 0.992452 \cdot Al - 1.51498 \cdot Ti - 0.506893 \cdot Nb + 0.0426004 \cdot Al \cdot Fe$, where Fe, Cr, Al, Ti, and Nb are the concentration of the respective elements in mass %.

IPC 8 full level
C22C 19/05 (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP KR US)
C22C 19/05 (2013.01 - EP US); **C22C 19/055** (2013.01 - EP KR); **C22C 19/056** (2013.01 - EP KR); **C22C 19/058** (2013.01 - EP KR); **C22F 1/10** (2013.01 - KR); **F24S 40/20** (2018.05 - EP); **F24S 80/10** (2018.05 - EP KR); **F24S 80/20** (2018.05 - EP); **C22F 1/10** (2013.01 - EP); **F24S 20/20** (2018.05 - 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)
DE 102020132219 A1 20210610; CN 114787402 A 20220722; CN 114787402 B 20231031; EP 4069873 A1 20221012; JP 2023504562 A 20230203; JP 7479472 B2 20240508; KR 20220099565 A 20220713; US 2023020446 A1 20230119; US 2023160040 A2 20230525; WO 2021110218 A1 20210610

DOCDB simple family (application)
DE 102020132219 A 20201203; CN 202080084602 A 20201204; DE 2020101026 W 20201204; EP 20839221 A 20201204; JP 2022533608 A 20201204; KR 20227020224 A 20201204; US 202017779919 A 20201204