Title (en)

NICKEL-BASE ALLOY COMPOSITION FOR COMPONENTS WITH REDUCED CRACKING TENDENCY AND OPTIMISED HIGH-TEMPERATURE PROPERTIES

Title (de)

NICKELBASIS-LEGIERUNGSZUSAMMENSETZUNG FÜR BAUTEILE MIT REDUZIERTER RISSNEIGUNG UND OPTIMIERTEN HOCHTEMPERATUREIGENSCHAFTEN

Title (fr)

COMPOSITION D'ALLIAGE À BASE DE NICKEL POUR COMPOSANTS AVEC UNE TENDANCE RÉDUITE À LA FISSURATION ET DES PROPRIÉTÉS OPTIMISÉES À HAUTE TEMPÉRATURE

Publication

**EP 4313444 A1 20240207 (DE)**

Application

**EP 22716051 A 20220317**

Priority

- EP 21164031 A 20210322
- EP 2022057026 W 20220317

Abstract (en)

[origin: WO2022200175A1] A nickel-based alloy composition is specified, comprising nickel as main constituent and the following further constituents in weight per cent (wt%): 0.04 to 0.10% carbon (C), 8 to 13% tantalum (Ta), 12 to 20% chromium (Cr), 3 to 25% cobalt (Co), less than 0.03% manganese (Mn), less than 0.06% silicon (Si), 0 to 6% molybdenum (Mo), less than 5.0% iron (Fe), 2 to 4% aluminium (Al), less than 0.01% magnesium (Mg), less than 0.02% vanadium (V), 0 to 6% tungsten (W), less than 1% titanium (Ti), less than 0.03% yttrium (Y), 0.005 to 0.015% boron (B), less than 0.003% sulfur (S), 0.005 to 0.04% zirconium (Zr) and less than 3% hafnium. Also specified are the use thereof for an additive manufacturing method, a method for additive manufacturing of a component from a powder of said alloy composition, a corresponding intermediate alloy, and a component consisting of the nickel-based superalloy.

IPC 8 full level

**B22F 1/00** (2022.01); **B22F 1/05** (2022.01); **B22F 10/28** (2021.01); **B33Y 70/00** (2020.01); **C22C 1/04** (2023.01); **C22C 19/05** (2006.01)

CPC (source: EP KR US)

**B22F 1/00** (2013.01 - EP); **B22F 1/05** (2022.01 - KR); **B22F 10/28** (2021.01 - EP KR US); **B22F 10/64** (2021.01 - US); **B22F 10/66** (2021.01 - US); **B33Y 10/00** (2014.12 - KR US); **B33Y 40/20** (2020.01 - US); **B33Y 70/00** (2014.12 - EP KR US); **B33Y 80/00** (2014.12 - US); **C22C 1/0433** (2013.01 - EP KR); **C22C 19/055** (2013.01 - EP); **C22C 19/056** (2013.01 - KR US); **C22F 1/10** (2013.01 - KR); B22F 1/05 (2022.01 - EP); B22F 2301/15 (2013.01 - US); B22F 2998/10 (2013.01 - EP KR US); B22F 2999/00 (2013.01 - EP KR US); Y02P 10/25 (2015.11 - EP KR)

C-Set (source: EP)

1. B22F 2999/00 + B22F 10/64 + B22F 3/15 + B22F 2003/248
2. B22F 2998/10 + B22F 9/082 + B22F 10/28 + B22F 10/64
3. B22F 2999/00 + B22F 2009/0824 + B22F 2201/02 + B22F 2201/11 + B22F 2201/12

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 4063045 A1 20220928**; CN 117062682 A 20231114; EP 4313444 A1 20240207; JP 2024514238 A 20240329; KR 20230159534 A 20231121; US 2024011128 A1 20240111; WO 2022200175 A1 20220929

DOCDB simple family (application)

**EP 21164031 A 20210322**; CN 202280021911 A 20220317; EP 2022057026 W 20220317; EP 22716051 A 20220317; JP 2023557443 A 20220317; KR 20237035845 A 20220317; US 202318372049 A 20230922