

Title (en)

SUPERALLOYS AND COMPONENTS FORMED THEREOF

Title (de)

SUPERLEGIERUNGEN UND DARAUS GEFORMTE KOMPONENTEN

Title (fr)

SUPERALLIAGES ET COMPOSANTS FORMÉS À PARTIR DE CEUX-CI.

Publication

**EP 3024957 B1 20180606 (EN)**

Application

**EP 14762119 A 20140220**

Priority

- US 201313948463 A 20130723
- US 2014017336 W 20140220

Abstract (en)

[origin: WO2015012888A1] A gamma prime nickel-base superalloy and components formed therefrom that exhibit improved high-temperature dwell capabilities, including creep and hold time fatigue crack growth behavior. A particular example of a component is a powder metallurgy turbine disk of a gas turbine engine. The gamma-prime nickel-base superalloy contains, by weight: 16.0 to 30.0% cobalt; 9.5 to 12.5% chromium; 4.0 to 6.0% tantalum; 2.0 to 4.0% aluminum; 2.0 to 3.4% titanium; 3.0 to 6.0% tungsten; 1.0 to 4.0% molybdenum; 1.5 to 3.5% niobium; up to 1.0% hafnium; 0.02 to 0.20% carbon; 0.01 to 0.05% boron; 0.02 to 0.10% zirconium; the balance essentially nickel and impurities. The superalloy has a W+Nb-Cr value of at least -6, is free of observable amounts of sigma and eta phases, and exhibits a time to 0.2% creep at 1300°F and 100 ksi of at least 1000 hours.

IPC 8 full level

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

CPC (source: EP)

**C22C 19/056** (2013.01); **C22C 19/057** (2013.01); **C22F 1/10** (2013.01)

Cited by

CN111051548A; WO2019018038A3

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)

**WO 2015012888 A1 20150129**; CA 2918337 A1 20150129; CA 2918337 C 20190115; CN 105492639 A 20160413; CN 105492639 B 20180522; EP 3024957 A1 20160601; EP 3024957 B1 20180606; JP 2016532777 A 20161020; JP 6356800 B2 20180711

DOCDB simple family (application)

**US 2014017336 W 20140220**; CA 2918337 A 20140220; CN 201480041751 A 20140220; EP 14762119 A 20140220; JP 2016529751 A 20140220