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

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DOCDB simple family (publication)

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