

Title (en)

Creep resistant rhenium-free nickel based superalloy

Title (de)

Kriechbeständige, rheniumfreie Nickelbasissuperlegierung

Title (fr)

Superaliage à base de nickel sans rhénium résistant au fluage

Publication

EP 2725110 B1 20170503 (DE)

Application

EP 12190156 A 20121026

Priority

EP 12190156 A 20121026

Abstract (en)

[origin: EP2725110A1] The nickel-based alloy comprises 11-13 atomic% aluminum, 4-14 atomic% cobalt, 6-12 atomic% chromium, 0.1-2 atomic% molybdenum, 0.1-3.5 atomic% tantalum, 0.1-3.5 atomic% titanium, 0.1-3 atomic% tungsten, and nickel and unavoidable impurity as remainder. The nickel-based alloy consists of a matrix (gamma) containing 50 volume% precipitated (gamma)-phase and 0.15-0.25 volume% precipitated (gamma /gamma)-phase at a temperature of 1050-1100[deg] C. The nickel-based alloy does not contain rhenium, and has a solidus temperature of more than 1320[deg] C. The nickel-based alloy comprises 11-13 atomic% aluminum, 4-14 atomic% cobalt, 6-12 atomic% chromium, 0.1-2 atomic% molybdenum, 0.1-3.5 atomic% tantalum, 0.1-3.5 atomic% titanium, 0.1-3 atomic% tungsten, and nickel and unavoidable impurity as remainder. The nickel-based alloy consists of a matrix (gamma) containing 50 volume% precipitated (gamma)-phase and 0.15-0.25 volume% precipitated (gamma /gamma)-phase at a temperature of 1050-1100[deg] C. The nickel-based alloy does not contain rhenium, and has a solidus temperature of more than 1320[deg] C. The amount of tungsten contained in the matrix (gamma) is higher than the amount of tungsten contained in the (gamma)-phase. An independent claim is included for article.

IPC 8 full level

C22C 19/05 (2006.01)

CPC (source: EP US)

C22C 19/056 (2013.01 - EP US); **C22C 19/057** (2013.01 - EP US); **C22F 1/10** (2013.01 - EP US); **F01D 5/28** (2013.01 - US)

Cited by

EP3091095A1; EP2927336A1; US10487376B2

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)

EP 2725110 A1 20140430; EP 2725110 B1 20170503; ES 2625825 T3 20170720; US 2014119941 A1 20140501; US 9580774 B2 20170228

DOCDB simple family (application)

EP 12190156 A 20121026; ES 12190156 T 20121026; US 201314061190 A 20131023