Title (en)

High-strength Ni-based wrought superalloy and manufacturing method of same

Title (de)

Hochfeste Knett-Superlegierung auf Nickelbasis und Verfahren zur Herstellung

Title (fr)

Superalliage forgeable à haute résistance à base de nickel et procédé de fabrication

Publication

EP 2298946 A3 20110928 (EN)

Application

EP 10176855 A 20100915

Priority

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- JP 2010205741 A 20100914

Abstract (en)

[origin: EP2298946A2] An Ni-based wrought superalloy in accordance with the present invention includes: (a) from 0.005 to 0.2 mass% of C; (b) from 0 to 1 mass% of Si; (c) from 0 to 1 mass% of Mn; (d) from 10 to 24 mass% of Cr; (e) at least one of Mo and W, the total content expressed by "[Mo content] + 0.5×[W content]" being from 5 to 17 mass%; (f) from 1 to 2 mass% of Al; (g) from 0.5 to 3.5 mass% of Ti; (h) from 0 to 10 mass% of Fe; (i) at least one of from 0.002 to 0.02 mass% of B and from 0.01 to 0.2 mass% of Zr; and (j) the balance being Ni and inevitable impurities, the Ni content being from 48 to 80 mass%. Furthermore, the Ni-based wrought superalloy has a polycrystalline body including a plurality of grains, and an average size of the grains after a heat treatment is from 72 to 289 μm. Moreover, a plurality of granular precipitations precipitate along the grain boundaries of the Ni-based wrought superalloy after the heat treatment, and an average length of the granular precipitations along the grain boundary is from 0.5 to 2.5 μm in an arbitrary cross-sectional view of the polycrystalline body.

IPC 8 full level

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CPC (source: EP)

C22C 19/055 (2013.01); **C22C 19/056** (2013.01); **C22F 1/10** (2013.01)

Citation (search report)

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