

Title (en)

NI-BASED SINGLE CRYSTAL SUPERALLOY AND ALLOY MEMBER USING THE SAME AS BASE

Title (de)

NI-BASIS-EINKRISTALLSUPERLEGIERUNG UND LEGIERUNGSBAUELEMENT, BEI DEM DIESES ALS BASIS DIENT

Title (fr)

SUPERALLIAGE MONOCRISTALLIN À BASE DE Ni ET ÉLÉMENT D ALLIAGE L UTILISANT EN TANT QUE BASE

Publication

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Application

EP 09770265 A 20090626

Priority

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Abstract (en)

[origin: EP2305845A1] Provided is an Ni-based single crystal superalloy wherein the ingredients have a composition containing, as ratio by mass, from 5.0% by mass to 7.0% by mass of Al, from 4.0% by mass to 8.0% by mass of Ta, from 0% by mass to 2.0% by mass of Mo, from 3.0% by mass to 8.0% by mass of W, from 3.0% by mass to 8.0% by mass of Re, from 0% by mass to 0.50% by mass of Hf, from 3.0% by mass to 6.0% by mass of Cr, from 0% by mass to 9.9% by mass of Co, from 1.0% by mass to 14.0% by mass of Ru, and from 0.1 % by mass to 4.0% by mass of Nb, with the balance of Ni and inevitable impurities. The alloy prevents TCP phase precipitation at high temperatures, therefore having improved strength at high temperatures and having oxidation resistance at high temperatures. Specifically, the invention is to provide a high-performance Ni-based single crystal superalloy having well balanced high-temperature strength and high-temperature oxidation resistance in practical use. The invention is also to provide the Ni-based single crystal superalloy having sufficient characteristics in point of "heat treatment window" that should not be overlooked in practical use.

IPC 8 full level

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