

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

EP 2305845 A4 20150513 (EN)

Application

EP 09770265 A 20090626

Priority

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- JP 2008168451 A 20080627

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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CPC (source: EP US)

C22C 19/057 (2013.01 - EP US)

Citation (search report)

- [XAI] EP 1057899 A2 20001206 - GEN ELECTRIC [US]
- [XAI] WO 2008032751 A1 20080320 - NAT INST FOR MATERIALS SCIENCE [JP], et al & EP 2062990 A1 20090527 - NAT INST FOR MATERIALS SCIENCE [JP], et al
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- [XAI] WO 2007119404 A1 20071025 - NAT INST FOR MATERIALS SCIENCE [JP], et al & EP 1997923 A1 20081203 - NAT INST FOR MATERIALS SCIENCE [JP]
- [XAI] EP 0434996 A1 19910703 - GEN ELECTRIC [US]
- See references of WO 2009157555A1

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DOCDB simple family (publication)

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