

Title (en)

NICKEL BASE SUPERALLOY COMPOSITIONS BEING SUBSTANTIALLY FREE OF RHENIUM AND SUPERALLOY ARTICLES

Title (de)

WEITGEHEND RHENIUMFREIE SUPERLEGIERUNGSZUSAMMENSETZUNGEN AUF NICKELBASIS UND SUPERLEGIERUNGSARTIKEL

Title (fr)

COMPOSITION DE SUPERALLIAGE AU NICKEL SENSIBLEMENT EXEMPTÉ DE RHÉNIUM, ET ARTICLES EN SUPERALLIAGE

Publication

EP 2188401 A1 20100526 (EN)

Application

EP 08798597 A 20080825

Priority

- US 2008074171 W 20080825
- US 96936007 P 20070831
- US 96466807 A 20071226

Abstract (en)

[origin: WO2009032579A1] A nickel base superalloy composition substantially free of rhenium includes, in percentages by weight: about 5-8 Cr; about 7-8 Co; about 1.3-2.2 Mo; about 4.75-6.75 W; about 6.0-7.0 Ta; if present, up to about 0.5 Ti; about 6.0-6.4 Al; about 0.15-0.6 Hf; if present, from about 0.03-0.06 C; if present, up to about 0.004 B; if present, one or more rare earths selected from Y, La, and Ce up to about 0.03 total, the balance including nickel and incidental impurities. The superalloy composition is able to provide sustained-peak low cycle fatigue and/or oxidation resistance properties comparable to second generation superalloy compositions including at least about 3 wt% rhenium. Superalloy articles incorporating the compositions include nozzles, shrouds, and splash plates for gas turbine engines.

IPC 8 full level

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CPC (source: EP US)

C22C 19/057 (2013.01 - EP US); **F01D 5/147** (2013.01 - US)

Citation (search report)

See references of WO 2009032579A1

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