

Title (en)  
Nickel-based superalloy and manufacturing process thereof

Title (de)  
Superlegierung auf Nickelbasis und Herstellungsverfahren dafür

Title (fr)  
Superaliage à base de Nickel et son procédé de fabrication

Publication  
**EP 2224025 A1 20100901 (EN)**

Application  
**EP 09425052 A 20090213**

Priority  
EP 09425052 A 20090213

Abstract (en)  
A nickel-based superalloy comprising in wt% Co=1-8%, W=7-15%, Mo=1-8%, Ta=7-15%, Al=4-9%, having a mechanical strength at very high temperature, up to 1300°C, higher than that of the known superalloys by raising the T solidus of the alloy and developing an intermetallic <sup>3</sup> phase in high percentages by volume, higher than 70%, which maintains its properties practically unchanged until the incipient melting of the alloy, having a T solvus , i.e. a solvus temperature of the <sup>3</sup> phase higher than the T solidus of the alloy, i.e. the temperature at which the liquid phase starts being present.

IPC 8 full level  
**C22C 19/03** (2006.01); **B21B 25/00** (2006.01)

CPC (source: EP)  
**B21D 37/01** (2013.01); **C22C 1/0433** (2013.01); **C22C 19/03** (2013.01); **C22C 19/051** (2013.01); **C22C 19/057** (2013.01); **C22C 19/07** (2013.01); **C22F 1/10** (2013.01); **B22F 2999/00** (2013.01)

C-Set (source: EP)  
1. **B22F 2999/00** + **B22F 9/082**  
2. **B22F 2999/00** + **B22F 9/082**

Citation (search report)  
• [A] EP 0421229 A1 19910410 - GEN ELECTRIC [US]  
• [A] EP 0241405 A2 19871014 - UNITED TECHNOLOGIES CORP [US]  
• [A] US 5900084 A 19990504 - DELUCA DANIEL P [US], et al  
• [A] US 3944416 A 19760316 - WALTER JOHN L

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US9656229B2; US9707530B2; US9689615B2; WO2014031522A3; WO2014031513A3; US11905585B2; WO2021025744A3

Designated contracting state (EPC)  
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 SE SI SK TR

Designated extension state (EPC)  
AL BA RS

DOCDB simple family (publication)  
**EP 2224025 A1 20100901**; **EP 2224025 B1 20120201**; AT E543920 T1 20120215; WO 2010092144 A1 20100819

DOCDB simple family (application)  
**EP 09425052 A 20090213**; AT 09425052 T 20090213; EP 2010051781 W 20100212