

Title (en)

High hardness and wear resistant nickel based alloy for use as high temperature tooling

Title (de)

Hochharte Nickelbasislegierung für verschleissfeste Hochtemperaturwerkzeuge

Title (fr)

Alliage de nickel résistant à l'usure et a dureté élevée, et son utilisation comme un outil à haute température

Publication

**EP 1647606 A1 20060419 (DE)**

Application

**EP 05450151 A 20050909**

Priority

**AT 17132004 A 20041013**

Abstract (en)

Precipitation hardened Ni based alloy containing at least 10 vol.% primary metal carbide of composition (wt.%):C (0.5-1.8), Mn (0.5-3.0), Cr (6.0-25.0), Mo (8.0-18.0), W (8.0-10.0), Nb (8.0-3.0), Al (2.5-6.0), Fe 2.5-20.0), Co (2.5-40.0), Ti (2.5-3.0), Hf (2.5-1.5), Ta (2.5-.0), Zr (2.5-0.5) and V (2.5-3.0). Independent claims are included for: (1) a method of preparing an object from the Ni based alloy containing the above elements in the amounts listed from a powder compact with calcining over the temperature range between the solution temperature of the gamma'-phase and the solidus temperature; (2) a tool, especially a welding tool or thermally loaded transformation tool comprising the Ni based alloy as described above; (3) a starting material for preparation of a welding tool or thermally loaded transformation tool comprising the Ni based alloy as described above.

IPC 8 full level

**C22C 19/05** (2006.01); **C22C 32/00** (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP)

**C22C 19/056** (2013.01); **C22C 32/0052** (2013.01); **C22F 1/10** (2013.01); **B22F 2003/248** (2013.01); **B22F 2005/001** (2013.01); **B22F 2998/10** (2013.01)

C-Set (source: EP)

**B22F 2998/10** + **B22F 9/082** + **B22F 3/15** + **B22F 3/24**

Citation (search report)

- [A] US 4727740 A 19880301 - YABUKI RITSUE [JP], et al
- [A] US 6200688 B1 20010313 - LIANG XUECHENG [US], et al
- [A] US 6238620 B1 20010529 - LIU CHAIN T [US], et al
- [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 122 (C - 168) 26 May 1983 (1983-05-26)

Cited by

CN109112327A; EP4129533A4; FR3105041A1; CN114574788A; CN114700495A; US7799271B2; WO2020093783A1; WO2008105788A3; JP2009540131A

Designated contracting state (EPC)

DE GB IT SE

DOCDB simple family (publication)

**AT 413544 B 20060315**; **AT A17132004 A 20050815**; DE 502005003720 D1 20080529; EP 1647606 A1 20060419; EP 1647606 B1 20080416

DOCDB simple family (application)

**AT 17132004 A 20041013**; DE 502005003720 T 20050909; EP 05450151 A 20050909