

Title (en)

Amorphous alloys on the base of Zr and their use

Title (de)

Amorphe Legierungen auf der Basis von Zr und deren Anwendung

Title (fr)

Alliage amorphe à base de Zr et son utilisation

Publication

EP 1632584 A1 20060308 (EN)

Application

EP 04405550 A 20040906

Priority

EP 04405550 A 20040906

Abstract (en)

An alloy is disclosed which contains at least four components. Optionally, a small proportion of a fifth component may be present. The alloy has a bulk structure containing at least one amorphous phase. The alloy composition follows an "80:20 scheme", i.e., the alloy composition is [(A x D 100-x) a (E y G 100-y) 100-a] 100-b Z b with the number "a" being approximately 80. Component A is Zr, Hf, Ti, Nb, La, Pd and/or Pt. The other components D, E, G and, optionally, Z are all different from each other and different from component A. Component A is the main component of the alloy. Importantly, the alloy is substantially free of nickel. This makes the alloy especially suitable for medical applications. Methods of preparing such an alloy, uses of the alloy and articles manufactured from the alloy are also disclosed.

IPC 8 full level

C22C 45/10 (2006.01)

CPC (source: EP US)

C22C 45/10 (2013.01 - EP US)

Citation (search report)

- [X] US 5803996 A 19980908 - INOUE AKIHISA [JP], et al
- [X] US 2003111142 A1 20030619 - HORTON JOSEPH A [US], et al
- [X] US 2002162605 A1 20021107 - HORTON JOSEPH A [US], et al
- [X] EP 0433670 A1 19910626 - MASUMOTO TSUYOSHI [JP], et al
- [XD] LÖFFLER, J.F.: "Bulk metallic glasses", INTERMETALLICS, vol. 11, 2003, pages 529 - 540, XP002314395

Cited by

EP2565289A4; CN103209718A; CN116580795A; CN110079701A; CN107829050A; EP2460543A1; EP2460544A1; US9869010B2; US8852264B2; US8057530B2; WO2011159596A1; WO2012068358A1; US9566147B2; US10441445B2; US11298251B2; US11779477B2; US11806488B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1632584 A1 20060308; CN 100580128 C 20100113; CN 101010440 A 20070801; EP 1786942 A1 20070523; JP 2008512562 A 20080424; JP 2012162805 A 20120830; JP 5149005 B2 20130220; JP 5604470 B2 20141008; US 2008190521 A1 20080814; WO 2006026882 A1 20060316

DOCDB simple family (application)

EP 04405550 A 20040906; CH 2005000525 W 20050905; CN 200580029743 A 20050905; EP 05775793 A 20050905; JP 2007529311 A 20050905; JP 2012085428 A 20120404; US 66199105 A 20050905