

Title (en)

METHOD FOR PRODUCING METAL MATRIX COMPOSITE MATERIALS

Title (de)

VERFAHREN ZUR HERSTELLUNG VON METALL-MATRIX-VERBUNDWERKSTOFFEN

Title (fr)

PROCEDE DE PRODUCTION DE MATERIAUX COMPOSITES A BASE DE MATRICE METALLIQUE

Publication

EP 1680246 A1 20060719 (DE)

Application

EP 04765979 A 20041016

Priority

- EP 2004011688 W 20041016
- DE 10352453 A 20031107

Abstract (en)

[origin: WO2005046911A1] The invention relates to a method for producing metal matrix composite materials, comprising at least one proportion of magnesium or one magnesium alloy and involving at least one production step in which a thixomolding ensues. According to the invention, an Mg₂Si phase having a volume fraction of at least 2 % is incorporated in a metal matrix preferably comprised of magnesium or of a magnesium alloy. The inventive method uses the thixomolding method for the in-situ production of a metallic composite material and is advantageous in that a broad range of adjustable volume fractions of the Mg₂Si phase in the composite material results whereby enabling the properties of the composite material to be individually modified. The inventive metal matrix composite material is particularly suited for producing thermally stressed parts of motor vehicles such as pistons or the like.

IPC 1-7

B22D 17/00; **C22C 1/00**; **C22C 32/00**; **C22C 23/00**; **C22C 1/04**

IPC 8 full level

B22D 17/00 (2006.01); **C22C 1/00** (2006.01); **C22C 1/10** (2006.01); **C22C 32/00** (2006.01)

CPC (source: EP KR US)

B22D 17/007 (2013.01 - EP KR US); **B22D 21/04** (2013.01 - KR); **C22C 1/1036** (2013.01 - EP KR US); **C22C 1/1052** (2023.01 - EP KR); **C22C 1/12** (2023.01 - EP KR US); **C22C 23/00** (2013.01 - KR); **C22C 32/0078** (2013.01 - EP KR US); **C22C 1/1052** (2023.01 - US)

Citation (search report)

See references of WO 2005046911A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

WO 2005046911 A1 20050526; CN 100402191 C 20080716; CN 1863626 A 20061115; DE 10352453 A1 20050602; DE 502004004318 D1 20070823; EP 1680246 A1 20060719; EP 1680246 B1 20070711; JP 2007510545 A 20070426; JP 4444963 B2 20100331; KR 101110947 B1 20120220; KR 20070008518 A 20070117; US 2007104606 A1 20070510; US 8282748 B2 20121009

DOCDB simple family (application)

EP 2004011688 W 20041016; CN 200480029270 A 20041016; DE 10352453 A 20031107; DE 502004004318 T 20041016; EP 04765979 A 20041016; JP 2006537122 A 20041016; KR 20067008204 A 20041016; US 57791404 A 20041016