

Title (en)

Composite material including silicon nitride whisker type short fiber reinforcing material and aluminum alloy matrix metal with moderate copper and magnesium contents.

Title (de)

Verbundwerkstoff mit kurzen Siliziumnitridfasern des Typs der versetzungsfreien Einkristalle als Verstärkungselement und eine Matrix, bestehend aus einer Aluminiumlegierung mit geringem Kupfer- und Magnesiumgehalt.

Title (fr)

Matériau composite comportant des fibres courtes de nitrure de silicium, du type monocristallin sans dislocations, comme matériau de renforcement et une matrice métallique d'un alliage d'aluminium avec des teneurs en cuivre et en magnésium peu élevées.

Publication

EP 0236729 B1 19931027 (EN)

Application

EP 87101468 A 19870204

Priority

JP 2453986 A 19860206

Abstract (en)

[origin: EP0236729A2] A composite material is made from silicon nitride whisker type short fiber material embedded in a matrix of metal. The matrix metal is an alloy consisting essentially of from approximately 2% to approximately 6% of copper, from approximately 0.5% to approximately 3% of magnesium, and remainder substantially aluminum. The fiber volume proportion of the silicon nitride type short fibers is between approximately 5% and approximately 50%, and may more desirably be between approximately 5% and approximately 40%. The magnesium content of the aluminum alloy matrix metal may desirably be between approximately 0.5% and approximately 2.5%. And, in the desirable case that the fiber volume proportion of the silicon nitride whisker type short fiber material is between approximately 30% and approximately 40%, then the copper content of the aluminum alloy matrix metal is desired to be between approximately 2% and approximately 5%.

IPC 1-7

C22C 1/09

IPC 8 full level

D01F 9/08 (2006.01); **C22C 21/00** (2006.01); **C22C 21/12** (2006.01); **C22C 29/16** (2006.01); **C22C 32/00** (2006.01); **C22C 47/00** (2006.01); **C22C 49/00** (2006.01); **C22C 49/06** (2006.01)

CPC (source: EP)

C22C 49/06 (2013.01)

Citation (examination)

- EP 0170396 A1 19860205 - MITSUBISHI ALUMINIUM [JP]
- Metals Handbook, 9th Ed., Vol. 2 (1979), page 45
- "Registration Record of International Alloy Designations and Chemical Composition Limits for Wrought Aluminium and Wrought Aluminium Alloys", The Aluminium Association, Sept. 1976, page 4

Cited by

US5106702A; EP0501539A3; EP0375473A1; FR2639360A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 0236729 A2 19870916; **EP 0236729 A3 19890705**; **EP 0236729 B1 19931027**; DE 3787904 D1 19931202; DE 3787904 T2 19940317; JP S62182235 A 19870810

DOCDB simple family (application)

EP 87101468 A 19870204; DE 3787904 T 19870204; JP 2453986 A 19860206