

Title (en)

Metal matrix composite with silicon-free reinforcing preform.

Title (de)

Verbundkörper mit Metallmatrize und vorgeformter Siliziumfreier Verstärkung.

Title (fr)

Matrice composite métallique à renforcement sans silicium préformé.

Publication

EP 0313271 A1 19890426 (EN)

Application

EP 88309592 A 19881013

Priority

CA 549758 A 19871020

Abstract (en)

A process is described for forming a composite cast article comprising an aluminum-silicon alloy matrix and a preform of bonded together Al₂O₃ fibres incorporated in the matrix, in which the preform is infiltrated under pressure by a melt of the alloy and the composite article thus formed is allowed to solidify by cooling. According to the novel feature, the fibres of the preform are bonded together by colloidal alumina rather than by the usual SiO₂. The result is a composite cast article which is free of silicon associated with decomposition of SiO₂ in the preform, such that a product of superior strength characteristics is obtained by using an infiltrating alloy containing the usual amounts of modifier to reduce the particle sizes reached by the silicon of the alloy during eutectic solidification. The novel preform is also described.

IPC 1-7

C22C 1/09

IPC 8 full level

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C-Set (source: EP)

B22F 2998/10 + **C22C 47/06** + **C22C 47/08**

Citation (search report)

- [X] EP 0094970 A1 19831130 - TOYOTA MOTOR CO LTD [JP], et al
- [A] EP 0204319 A1 19861210 - TOYOTA MOTOR CO LTD [JP]
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- [Y] PATENT ABSTRACTS OF JAPAN, vol. 10, no. 122 (M-476), 7th May 1986; & JP-A-60 250 893 (SUMITOMO KEIKINZOKU KOGYO K.K.) 11-12-1985

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DOCDB simple family (application)

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