

Title (en)

Process of forming an aluminium sheet with excellent high speed superplastic formability

Title (de)

Verfahren zur Herstellung eines Aluminiumbleches mit hervorragender Hochgeschwindigkeitssuperplastizität

Title (fr)

Procédé de production d'une tôle en alliage d'aluminium présentant une excellente aptitude au formage superplastique à haute vitesse.

Publication

**EP 0846781 B1 20001115 (EN)**

Application

**EP 95940435 A 19951212**

Priority

- JP 9502564 W 19951212
- JP 23770795 A 19950823

Abstract (en)

[origin: WO9708354A1] An alloy containing 3.0 to 8.0 wt.% of Mg, 0.001 to 0.1 wt.% of Ti and as small amounts of Fe and Si (as impurities) as 0.06 wt.% or below and the balance consisting of Al and unavoidable impurities wherein the number per square millimeter of grains of an Al-Fe-Si compound having a diameter of 1  $\mu$  m or above is 2000 or below, the mean crystal grain diameter is 25 to 200  $\mu$  m and the elongation is 350 % or above as worked at 350 to 550 DEG C and a strain rate of  $10^{-2}$  to  $10^0$ /s. This alloy may further contain a small amount of Cu, Mn and/or Cr and is formed at a temperature of 350 to 550 DEG C and a strain rate of  $10^{-3}$  to  $10^0$ /s. An aluminum alloy sheet which is excellent in high-speed superplastic formability and therefore can be formed at high temperature and high speed is obtained and the use of this sheet shortens the forming time to improve the productivity.

IPC 1-7

**C22C 21/06**; **C22F 1/047**

IPC 8 full level

**B21B 3/00** (2006.01); **C22C 21/00** (2006.01); **C22C 21/06** (2006.01); **C22F 1/00** (2006.01); **C22F 1/047** (2006.01)

CPC (source: EP US)

**C22C 21/06** (2013.01 - EP US); **C22F 1/047** (2013.01 - EP US)

Cited by

EP1842935A4; US8420011B2; WO2005103313A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**WO 9708354 A1 19970306**; DE 69519444 D1 20001221; DE 69519444 T2 20010613; EP 0846781 A1 19980610; EP 0846781 A4 19981118; EP 0846781 B1 20001115; JP 3145904 B2 20010312; JP H0959736 A 19970304; US 2001001969 A1 20010531

DOCDB simple family (application)

**JP 9502564 W 19951212**; DE 69519444 T 19951212; EP 95940435 A 19951212; JP 23770795 A 19950823; US 9798 A 19980116