Title (en)

Production of ultra-fine grain structure in as-cast aluminium alloys

Title (de)

Herstellung von einer ultrafeinen Korngefüge in Aluminium-Legierungen im Gusszustand

Title (fr)

Production de structure de grains ultrafins dans les alliages d'aluminium bruts de coulée

Publication

EP 1205567 B1 20050504 (EN)

Application

EP 01126694 A 20011108

Priority

US 71017500 A 20001110

Abstract (en)

[origin: EP1205567A2] A method of controlling grain size in as-cast aluminum alloy having the steps of a) providing a molten aluminum alloy including an alloying element selected from the group consisting of Ti, Sc, Zr, V, Hf, Nb and Y; b) adding a grain refiner to the molten aluminum alloy to form a melt; and c) solidifying the melt to form an ingot. The grain refiner includes Ti and B or C, and is added to the melt in an amount to yield the concentration in the melt of B or C from the grain refiner of about 0.003-0.010 wt. %. Grains in the as-cast aluminum alloy are about 200 microns or less in size.

IPC 1-7

C22C 1/03; C22C 21/00

IPC 8 full level

C22C 1/02 (2006.01); **C22C 1/03** (2006.01); **C22C 21/00** (2006.01)

CPC (source: EP)

C22C 1/026 (2013.01); **C22C 1/03** (2013.01); **C22C 21/00** (2013.01)

Cited by

CN105624481A; CN102220525A; CN102212710A; CN101871052A; CN110983213A; CN102268620A; CN102268621A; CN102703738A; CN101994045A; CN102329993A; FR2875815A1; US2017022593A1; CN109385542A; CN100402681C; CN102225464A; CN103060584A; EP2224026A1; EP1590495A4; EP2357263A4; CN103614581A; US7615125B2; CN102212725A; CN102409270A; CN102433454A; GB2494353A; GB2494353B; WO2006035133A1; WO2012110788A3; WO2012110788A2; US10329651B2; WO2012065454A1; WO2007051162A3; WO2012065455A1; WO2012065453A1; US8157932B2; US8349462B2; US8950465B2

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

EP 1205567 A2 20020515; **EP 1205567 A3 20020605**; **EP 1205567 B1 20050504**; CA 2361484 A1 20020510; DE 60110523 D1 20050609

DOCDB simple family (application)

EP 01126694 A 20011108; CA 2361484 A 20011108; DE 60110523 T 20011108