

Title (en)

Rare earth magnets and alloy powder for rare earth magnets and their manufacturing methods.

Title (de)

Seltenerdmagneten und Legierungspuder für Seltenerdmagneten und Herstellungsverfahren.

Title (fr)

Aimants à terre rare et poudre en alliage pour aimants à terre rare et procédé de fabrication.

Publication

EP 0542529 A1 19930519 (EN)

Application

EP 92310299 A 19921111

Priority

- JP 32377991 A 19911111
- JP 9378092 A 19920319
- JP 12418092 A 19920416
- JP 17476792 A 19920608
- JP 17619992 A 19920609

Abstract (en)

For the purpose of establishing the manufacturing method to obtain the Fe₃B type Fe-Co-B-R-M system high performance resin bonded magnet which possesses improved iH_c and (BH)_{max} and can be reliably mass produced, the specific composition of Fe-Co-B-R(Pr,Nd)-M(Ag,Al,Si,Ga,Cu,Au) type molten alloy was rapidly solidified by the melt-quenching or atomization methods, or a combination of the two methods to obtain more than 90% of the solid in an essentially amorphous structure. After the temperature was raised at the rate of 1 SIMILAR 15 DEG C/ min., the alloy was heat treated at 550-730 DEG C for 5 minutes SIMILAR 6hours to obtain Fe-rich the boron compound phase, which crystallizes the body centered tetragonal Fe₃P type crystalline structure, and the Nd₂Fe₁₄B type crystalline structure phase both coexisting as fine crystalline clusters of the average crystalline diameter of 5nm SIMILAR 100nm. The alloy powder which contains the ferromagnetic phase, where the boron compound phase and the Nd₂Fe₁₄B type phase coexist, is combined with resin to produce the high performance resin bonded magnet with iH_c>/=3kOe,Br>/=5kG, and (BH)_{max}>/=3MGOe.

IPC 1-7

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IPC 8 full level

C22C 1/04 (2006.01); **H01F 1/057** (2006.01)

CPC (source: EP)

C22C 1/0441 (2013.01); **H01F 1/0571** (2013.01); **H01F 1/0578** (2013.01)

Citation (search report)

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- [A] PATENT ABSTRACTS OF JAPAN vol. 14, no. 324 (E-951)(4267) 11 July 1990 & JP-A-02 109 303 (HTACHI METALS LTD) 23 April 1990
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- [A] PATENT ABSTRACTS OF JAPAN vol. 14, no. 270 (C-727)(4213) 12 June 1990 & JP-A-02 280 538 (HTACHI METALS LTD) 20 March 1990

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