

Title (en)  
Permanent magnets.

Title (de)  
Dauermagnete.

Title (fr)  
Aimants permanents.

Publication  
**EP 0338597 B1 19950111 (EN)**

Application  
**EP 89111005 A 19850227**

Priority

- EP 85102200 A 19850227
- JP 3692384 A 19840228
- JP 3692484 A 19840228
- JP 3692584 A 19840228
- JP 3692684 A 19840228

Abstract (en)  
[origin: EP0338597A2] Permanent magnet materials, produced according to the following steps: forming an alloy powder having a mean particle size of 0.3-80  $\mu$ m and composed of, in atomic percentage, 8-30 % R (provided that R is at least one of rare earth elements including Y), 2-28 % B, and the balance Fe and inevitable impurities, sintering the formed body at a temperature of 900-1200 DEG C, subjecting the sintered body to a primary heat treatment at a temperature of 750-1000 DEG C, then cooling the resultant body to a temperature of no higher than 680 DEG C at a cooling rate of 3-2000 DEG C/min, and further subjecting the thus cooled body to a secondary heat treatment at a temperature of 480-700 DEG C. Magnets having an energy product (BH)<sub>max</sub> of at least 20 MGOe and a coercitive force (iH<sub>c</sub>) of at least 10 kOe or magnets having an energy product (BH)<sub>max</sub> of 40 MGOe or more can be obtained by specific compositions.

IPC 1-7  
**H01F 1/053**

IPC 8 full level  
**B22F 3/24** (2006.01); **C22C 1/04** (2006.01); **H01F 1/057** (2006.01)

CPC (source: EP)  
**B22F 3/24** (2013.01); **C22C 1/0441** (2013.01); **H01F 1/0577** (2013.01)

Cited by  
ES2164528A1; GB2308384A; GB2308384B

Designated contracting state (EPC)  
BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)  
**EP 0338597 A2 19891025; EP 0338597 A3 19911113; EP 0338597 B1 19950111**

DOCDB simple family (application)  
**EP 89111005 A 19850227**