

Title (en)

RARE EARTH MAGNET AND PRODUCTION METHOD THEREOF

Title (de)

SELTENERDMAGNET UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

AIMANT LIÉ AUX TERRES RARES ET PROCÉDÉ DE PRODUCTION ASSOCIÉ

Publication

**EP 3522178 A1 20190807 (EN)**

Application

**EP 18215888 A 20181224**

Priority

- JP 2017254475 A 20171228
- JP 2018151433 A 20180810
- JP 2018221584 A 20181127

Abstract (en)

[SUMMARY][PROBLEM TO BE SOLVED]To provide a rare earth magnet protected from reduction in the coercive force at high temperatures and a production method thereof.[MEANS TO SOLVE THE PROBLEM]A rare earth magnet comprising a main phase and a grain boundary phase present around the main phase, wherein: the overall composition is represented by the formula: (Nd(Ce, La)<sub>Ry</sub>)FeCoBMs·(RRM), wherein Ris one or more members selected from rare earth elements other than N, Ce and La, Ris one or more members selected from Pr, Nd, Pm, Sm, Eu and Gd, Ris one or more members selected from rare earth elements other than R, Mand Mare a predetermined element, 5.0≤p≤20.0, 0≤q≤8.0, 4.0≤r≤6.5, 0≤s≤2.0, 0≤t≤10.0, 0.4≤x≤0.8, 0≤y≤0.1, 0.5≤z≤0.8, and 0≤w≤0.1 and La is contained in an amount of 1/9 to 3 times by molar ratio relative to Ce.

IPC 8 full level

**H01F 1/057** (2006.01); **H01F 41/02** (2006.01)

CPC (source: BR CN EP KR RU)

**B22F 3/14** (2013.01 - CN); **B22F 9/04** (2013.01 - CN); **C22C 38/002** (2013.01 - CN); **C22C 38/005** (2013.01 - CN); **C22C 38/007** (2013.01 - CN); **C22C 38/04** (2013.01 - CN); **C22C 38/06** (2013.01 - CN); **C22C 38/10** (2013.01 - CN); **C22C 38/16** (2013.01 - CN); **C22C 38/32** (2013.01 - CN); **H01F 1/053** (2013.01 - RU); **H01F 1/057** (2013.01 - RU); **H01F 1/0572** (2013.01 - KR); **H01F 1/0576** (2013.01 - CN EP KR); **H01F 1/0577** (2013.01 - BR CN); **H01F 41/02** (2013.01 - RU); **H01F 41/0266** (2013.01 - KR); **H01F 41/0273** (2013.01 - CN); **H01F 41/0293** (2013.01 - KR); **B22F 2009/048** (2013.01 - CN); **C22C 2202/02** (2013.01 - KR); **H01F 1/0571** (2013.01 - EP); **H01F 41/0293** (2013.01 - EP)

Citation (applicant)

WO 2014196605 A1 20141211 - TOYOTA MOTOR CO LTD [JP]

Citation (search report)

- [XI] US 6136099 A 20001024 - AKIOKA KOJI [JP], et al
- [ID] US 2016141083 A1 20160519 - ITO MASAOKI [JP], et al
- [I] JP 2016111136 A 20160620 - TOYOTA MOTOR CORP
- [A] US 5129963 A 19920714 - PANCHANATHAN VISWANATHAN [US], et al

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EP3919644A1; EP3786983A1; CN112447351A; EP3901967A1; EP3989244A1; CN114388211A; US11721479B2; US11664140B2

Designated contracting state (EPC)

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