

Title (en)

Magnesium oxide coating for electrical steels and the method of coating.

Title (de)

Magnesiumoxyd-Beschichtung für Elektrobleche und Beschichtungsverfahren.

Title (fr)

Revêtement d'oxyde de magnésium pour aciers électriques et procédé pour former un revêtement.

Publication

EP 0416420 B1 19941214 (EN)

Application

EP 90116384 A 19900827

Priority

US 40471489 A 19890908

Abstract (en)

[origin: EP0416420A2] Decarburized grain oriented silicon steel is provided with an annealing separator which forms a glass film after the final high temperature anneal. The magnesia used as the annealing separator has a total chlorine level of 0.01 to 0.20% by weight based on the weight of magnesia with at least 0.01% metal chloride selected from the group of Mg, Ca, Na and K. The chloride addition acts to seal the coating surface during the final anneal to control diffusion and stabilize the secondary grain growth. The glass film which forms during the anneal may be laser scribed for domain refinement without coating damage. The magnesia may also contain additions of phosphates, TiO₂, SiO₂, Cr and B. The temperature of the magnesia is maintained below 25 DEG C to control hydration and eliminate the need for other additives in the magnesia slurry to control hydration.

IPC 1-7

C21D 8/12; **C21D 1/70**

IPC 8 full level

C23C 22/00 (2006.01); **C21D 8/12** (2006.01); **C21D 9/46** (2006.01); **H01F 1/16** (2006.01); **C21D 3/04** (2006.01)

CPC (source: EP KR)

C21D 1/70 (2013.01 - KR); **C21D 8/12** (2013.01 - KR); **C21D 8/1283** (2013.01 - EP); **C21D 3/04** (2013.01 - EP)

Cited by

EP4053296A4; US2013292005A1; DE19750066C1; US6423156B1; US5863356A; EP0684322A3; US5629251A; DE102008039326A1; WO2013120714A1; WO9525820A1; EP0789093B2

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EP 90116384 A 19900827; BR 9004444 A 19900906; CA 2024226 A 19900829; DE 69015060 T 19900827; JP 23599290 A 19900907; KR 900014201 A 19900908