

Title (en)
METHOD FOR MAKING AN ELECTRIC SHEET STEEL WITH ORIENTED GRAINS FOR THE MANUFACTURE OF TRANSFORMER MAGNETIC CIRCUITS IN PARTICULAR

Title (de)
VERFAHREN ZUM HERSTELLEN VON KORNIORIENTIERTEN ELEKTROSTAHLBLECHEN INSBESONDERE FÜR MAGNETKERNE VON TRANSFORMATOREN

Title (fr)
PROCEDE DE FABRICATION D'UNE TOLE D'ACIER ELECTRIQUE A GRAINS ORIENTES POUR LA FABRICATION NOTAMMENT DE CIRCUITS MAGNETIQUES DE TRANSFORMATEURS

Publication
EP 0912768 B1 20040512 (FR)

Application
EP 98914939 A 19980318

Priority

- FR 9800540 W 19980318
- FR 9703451 A 19970321

Abstract (en)
[origin: FR2761081A1] The invention concerns a method for making an electric sheet steel with oriented grains characterised in that the slab or strip has the following composition: less than 0.1 % carbon, more than 2.5 % silicon, less than 0.006 % sulphur, more than 0.002 % manganese, more than 0.008 % aluminium, more than 0.004 nitrogen, more than 0.02 % copper, less than 0.02 % tin. The method consists in subjecting the above slab to temperature less than 1350 DEG C and hot rolling such that: the percentage by mass of non-precipitated sulphur in the form of coarse particles of average diameter not less than 300 nanometers (nm) is higher than 0.004 %; the percentage by mass of precipitated nitrogen only on the form of fine particles of average diameter less than 100 nm is less than 40 % of the total percentage by mass of nitrogen.

IPC 1-7
C21D 8/12; C22C 38/02

IPC 8 full level
C21D 8/12 (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/16** (2006.01); **H01F 1/16** (2006.01); **H01F 41/02** (2006.01)

CPC (source: EP KR)
C21D 8/12 (2013.01 - KR); **C21D 8/1222** (2013.01 - EP); **C21D 8/1261** (2013.01 - EP); **C22C 38/02** (2013.01 - KR); **C21D 8/1205** (2013.01 - EP); **C21D 8/1288** (2013.01 - EP)

Designated contracting state (EPC)
AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE

DOCDB simple family (publication)
FR 2761081 A1 19980925; FR 2761081 B1 19990430; AT E266742 T1 20040515; CN 1220704 A 19990623; CZ 375398 A3 19990714; DE 69823771 D1 20040617; DE 69823771 T2 20050512; EP 0912768 A1 19990506; EP 0912768 B1 20040512; JP 2001506704 A 20010522; KR 20000011149 A 20000225; PL 330039 A1 19990426; WO 9842882 A1 19981001

DOCDB simple family (application)
FR 9703451 A 19970321; AT 98914939 T 19980318; CN 98800332 A 19980318; CZ 375398 A 19980318; DE 69823771 T 19980318; EP 98914939 A 19980318; FR 9800540 W 19980318; JP 54511998 A 19980318; KR 19980709309 A 19981118; PL 33003998 A 19980318