

Title (en)
UNIDIRECTIONAL MAGNETIC STEEL SHEET EXCELLENT IN IRON LOSS CHARACTERISTIC

Title (de)
UNIDIREKTIONALES MAGNETISCHES STAHLBLECH MIT HERVORRAGENDER EISENVERLUSTCHARAKTERISTIK

Title (fr)
TÔLE MAGNÉTIQUE UNIDIRECTIONNELLE EN ACIER PRÉSENTANT D'EXCELLENTE CARACTÉRISTIQUES DE PERTES DANS LE FER

Publication
EP 2083091 A1 20090729 (EN)

Application
EP 07830241 A 20071016

Priority
• JP 2007070507 W 20071016
• JP 2006287709 A 20061023

Abstract (en)
The present invention provides grain-oriented electrical sheet more superior in watt loss compared with the past by dividing the watt loss of grain-oriented electrical sheet introducing strain by irradiation of a laser beam etc. into hysteresis loss and eddy current loss and, in particular from the viewpoint of the eddy current loss, quantitatively suitably controlling the distribution of the strain and residual stress in the sheet thickness direction, that is, grain-oriented electrical sheet obtained by irradiating a laser beam etc. to introduce lines of strain substantially perpendicular to the rolling direction uniformly in a sheet width direction and cyclically in the rolling direction for magnetic domain control, characterized in that in the two-dimensional distribution of a rolling direction compressive residual stress occurring near one location of the introduction of strain in a cross-section perpendicular to the sheet width direction, the value of the rolling direction compressive residual stress integrated in the region of the cross-section where there is compressive residual stress is within a predetermined range.

IPC 8 full level
C21D 8/12 (2006.01); **C21D 9/46** (2006.01); **C21D 10/00** (2006.01); **H01F 1/16** (2006.01)

CPC (source: EP KR US)
C21D 8/12 (2013.01 - EP KR US); **C21D 8/1277** (2013.01 - EP US); **C21D 8/1294** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C21D 10/005** (2013.01 - EP US); **H01F 1/16** (2013.01 - KR); **H01F 1/14716** (2013.01 - EP US)

Cited by
EP4036258A4

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
US 2009272464 A1 20091105; BR PI0717360 A2 20111108; BR PI0717360 B1 20141104; CN 101528951 A 20090909; CN 101528951 B 20101229; EP 2083091 A1 20090729; EP 2083091 A4 20120725; EP 2083091 B1 20201202; JP 2008106288 A 20080508; JP 5613972 B2 20141029; KR 20090064419 A 20090618; PL 2083091 T3 20210614; RU 2400542 C1 20100927; TW 200831676 A 20080801; TW I372786 B 20120921; WO 2008050700 A1 20080502

DOCDB simple family (application)
US 31175607 A 20071016; BR PI0717360 A 20071016; CN 200780039168 A 20071016; EP 07830241 A 20071016; JP 2006287709 A 20061023; JP 2007070507 W 20071016; KR 20097006759 A 20090401; PL 07830241 T 20071016; RU 2009119474 A 20071016; TW 96139233 A 20071019