

Title (en)
GRAIN-ORIENTED ELECTRICAL STEEL SHEET, AND MANUFACTURING METHOD THEREFOR

Title (de)
KORNORIENTIERTES ELEKTROSTAHLBLECH UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
TÔLE D'ACIER ÉLECTRIQUE À GRAINS ORIENTÉS, ET SON PROCÉDÉ DE FABRICATION

Publication
EP 4265747 A4 20240626 (EN)

Application
EP 21911419 A 20211217

Priority
• KR 20200180132 A 20201221
• KR 2021019327 W 20211217

Abstract (en)
[origin: EP4265747A1] A method for manufacturing a grain-oriented electrical steel sheet, according to one embodiment of the present invention, comprises the steps of: manufacturing a hot rolled sheet by hot rolling a slab comprising, by wt%, 2.5-4.0% of Si, 0.03-0.09% of C, 0.015-0.040% of Al, 0.04-0.15% of Mn, 0.01% or less of S (excluding 0%) and 0.002-0.012% of N, and the balance of Fe and other inevitable impurities; cold rolling the hot rolled sheet to manufacture a cold rolled sheet; performing primary recrystallization annealing on the cold rolled sheet; and performing secondary recrystallization annealing on the cold rolled sheet for which the primary recrystallization annealing has been completed.

IPC 8 full level
C21D 8/12 (2006.01); **C21D 6/00** (2006.01); **C21D 9/46** (2006.01); **C22C 38/02** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR US)
C21D 6/008 (2013.01 - EP); **C21D 8/1238** (2013.01 - EP); **C21D 8/1283** (2013.01 - EP KR US); **C21D 9/46** (2013.01 - EP KR); **C22C 38/004** (2013.01 - US); **C22C 38/008** (2013.01 - US); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/04** (2013.01 - US); **C22C 38/06** (2013.01 - US); **C22C 38/60** (2013.01 - EP US); **C21D 2201/05** (2013.01 - EP US)

Citation (search report)
• [A] JP 2012031515 A 20120216 - JFE STEEL CORP
• [A] CN 103025903 A 20130403 - JFE STEEL CORP
• [A] JP 4224957 B2 20090218
• [A] US 2017313887 A1 20171102 - KWON MIN SERK [KR], et al
• [A] JP 2012177149 A 20120913 - JFE STEEL CORP
• [A] WO 2019182154 A1 20190926 - NIPPON STEEL CORP [JP] & EP 3770281 A1 20210127 - NIPPON STEEL CORP [JP]
• [E] EP 4269651 A1 20231101 - POSCO CO LTD [KR]
• See references of WO 2022139352A1

Cited by
EP4269651A4

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 4265747 A1 20231025; EP 4265747 A4 20240626; CN 116888284 A 20231013; JP 2024503998 A 20240130; KR 102538120 B1 20230526; KR 20220089467 A 20220628; US 2024035128 A1 20240201; WO 2022139352 A1 20220630

DOCDB simple family (application)
EP 21911419 A 20211217; CN 202180093870 A 20211217; JP 2023537560 A 20211217; KR 20200180132 A 20201221; KR 2021019327 W 20211217; US 202118268584 A 20211217