Title (en)

ENVIRONMENTALLY-FRIENDLY, PB-FREE FREE-MACHINING STEEL, AND MANUFACTURING METHOD FOR SAME

Title (de)

UMWELTFREUNDLICHER PB-FREIER AUTOMATENSTAHL UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

ACIER FACILEMENT USINABLE, SANS PB ET RESPECTUEUX DE L'ENVIRONNEMENT ET SON PROCÉDÉ DE FABRICATION

Publication

EP 2322680 A4 20150729 (EN)

Application

EP 09805163 A 20090803

Priority

- KR 2009004329 W 20090803
- KR 20080077067 A 20080806
- KR 20090018464 A 20090304

Abstract (en)

[origin: EP2322680A2] A lead-free free-cutting steel includes, by wt%, about 0.03-0.13% of carbon (C), about 0.1% or less of silicon (Si), about 0.7-2.0% of manganese (Mn), about 0.05-0.15% of phosphorous (P), about 0.2-0.5% of sulfur (S) of, about 0.001-0.01% of boron (B), about 0.1-0.5% of chromium (Cr), about 0.003-0.2% of titanium (Ti), about 0.005-0.015% of nitrogen (N), about 0.03% or less of oxygen (O), residual iron (Fe), and other unavoidable impurities. In the lead-free free-cutting steel, the number of manganese sulfide (MnS) inclusions having a particle size of about 5 μm 2 or more may include in the range of about 300-1000 per mm 2 of a material in a section of a wire rod rolling direction. The present invention is also related to a method of manufacturing an eco-friendly lead-free free-cutting steel by properly controlling a total oxygen content by step in steelmaking steps.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 8/06** (2006.01); **C22C 38/04** (2006.01); **C22C 38/38** (2006.01)

CPC (source: EP)

C21D 8/06 (2013.01); **C21D 9/0075** (2013.01); **C22C 38/001** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/28** (2013.01); **C22C 38/32** (2013.01); C21D 2211/004 (2013.01)

Citation (search report)

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- [XA] EP 1507016 A1 20050216 - SUMITOMO METAL IND [JP]
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- See references of WO 2010016702A2

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CN103074466A

Designated contracting state (EPC)

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 SE SI SK SM TR

DOCDB simple family (publication)

EP 2322680 A2 20110518; **EP 2322680 A4 20150729**; **EP 2322680 B1 20161026**; CN 102165085 A 20110824; CN 102165085 B 20130508; JP 2011530004 A 20111215; JP 5277315 B2 20130828; TW 201006939 A 20100216; TW I391500 B 20130401; WO 2010016702 A2 20100211; WO 2010016702 A3 20100610; WO 2010016702 A9 20100408

DOCDB simple family (application)

EP 09805163 A 20090803; CN 200980138439 A 20090803; JP 2011521051 A 20090803; KR 2009004329 W 20090803; TW 98125856 A 20090731