

Title (en)
FREE-CUTTING STEEL

Title (de)
AUTOMATENSTAHL

Title (fr)
ACIER DE DÉCOLLETAGE

Publication
EP 3309272 A4 20181024 (EN)

Application
EP 16807549 A 20160609

Priority
• JP 2015117795 A 20150610
• JP 2016067188 W 20160609

Abstract (en)
[origin: EP3309272A1] A free-cutting steel is provided that is excellent in machinability (surface roughness, tool life, chip treatability) and rusting characteristics. The free-cutting steel of this invention has a chemical composition that contains, in mass%, C: 0.005 to 0.150%, Si: less than 0.010%, Mn: 1.02 to 2.00%, P: 0.010 to 0.200%, S: 0.350 to 0.600%, Pb: 0.010 to 0.100%, N: 0.004 to 0.015%, O: 0.0080 to 0.0250%, Al: 0 to 0.003%, one or more types of element selected from a group consisting of Ca, Mg and Zr: 0 to 0.0005% in total, and B: 0 to 0.0200%, with the balance being Fe and impurities, the chemical composition satisfying Formula (1): $Mn / S \geq 2.90$ where, the content (mass%) of a corresponding element is substituted for each symbol of an element in Formula (1).

IPC 8 full level
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CPC (source: EP)
C22C 38/00 (2013.01); **C22C 38/001** (2013.01); **C22C 38/004** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/06** (2013.01); **C22C 38/14** (2013.01); **C22C 38/60** (2013.01)

Citation (search report)
• [X] WO 2014125770 A1 20140821 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
• [I] EP 2096186 A1 20090902 - NIPPON STEEL ENGINEERING CORP [JP]
• [I] JP H07252588 A 19951003 - NIPPON STEEL CORP
• See references of WO 2016199843A1

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CN115058634A; US11427901B2

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

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