

Title (en)
HIGH-STRENGTH UNTEMPERED STEEL FOR FRACTURE SPLITTING AND STEEL COMPONENT FOR FRACTURE SPLITTING

Title (de)
Hochfester ungehärteter Stahl für Fracture-Splitting-Verfahren und Stahl-Komponente für Fracture-Splitting-Verfahren

Title (fr)
ACIER NON REVENU A RESISTANCE ELEVEE POUR SEPARATION PAR RUPTURE ET COMPOSANT EN ACIER POUR SEPARATION PAR RUPTURE

Publication
EP 2305851 A4 20140129 (EN)

Application
EP 09803005 A 20090723

Priority
• JP 2009063535 W 20090723
• JP 2008195094 A 20080729

Abstract (en)
[origin: EP2305851A1] High strength fracture splitting use non-heat treated steel containing, by mass%, C: 0.23 to 0.35%, Si: 0.70 to 1.30%, Mn: 0.76 to 1.17%, P: 0.040 to 0.080%, S: 0.040 to 0.118%, Cr: 0.05 to 0.20%, Al: 0.010% or less, V: 0.27 to 0.45%, and N: 0.0050 to 0.0145%, having a balance of Fe and unavoidable impurities, having values of three formulas limiting the composition of ingredients satisfying required values, ensuring hot ductility, and, when hot forged, then cooled by air cooling or air blast cooling, forming a ferrite-pearlite structure having a ferrite fraction of 60% or more, and a fracture splitting use steel part.

IPC 8 full level
C22C 38/00 (2006.01); **C22C 38/38** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP)
C22C 38/001 (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/06** (2013.01); **C22C 38/24** (2013.01)

Citation (search report)
• [A] JP 2001262267 A 20010926 - SUMITOMO METAL IND
• [A] JP 2005054228 A 20050303 - AICHI STEEL WORKS LTD, et al
• [A] JP 2004277841 A 20041007 - SUMITOMO METAL IND
• [A] JP 2006052432 A 20060223 - NISSAN MOTOR, et al
• [A] EP 1780296 A1 20070502 - NISSAN MOTOR [JP]
• [A] GU Z ET AL: "Fracture splitting technology of automobile engine connecting rod", THE INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY, SPRINGER, BERLIN, DE, vol. 25, no. 9-10, 1 May 2005 (2005-05-01), pages 883 - 887, XP019380231, ISSN: 1433-3015, DOI: 10.1007/S00170-003-2022-2
• See references of WO 2010013763A1

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 2305851 A1 20110406; EP 2305851 A4 20140129; EP 2305851 B1 20150318; CN 101883874 A 20101110; CN 101883874 B 20120118; JP 5340290 B2 20131113; JP WO2010013763 A1 20120112; TW 201012948 A 20100401; TW I396755 B 20130521; WO 2010013763 A1 20100204

DOCDB simple family (application)
EP 09803005 A 20090723; CN 200980101199 A 20090723; JP 2009063535 W 20090723; JP 2010522745 A 20090723; TW 98125198 A 20090727