

Title (en)  
WIRE MATERIAL FOR STEEL WIRE, AND STEEL WIRE

Title (de)  
DRAHTMATERIAL FÜR STAHLDRAHT SOWIE STAHLDRAHT

Title (fr)  
MATÉRIAU DE FIL POUR FIL D'ACIER, ET FIL D'ACIER

Publication  
**EP 3165623 A4 20180404 (EN)**

Application  
**EP 15814419 A 20150602**

Priority  
• JP 2014136223 A 20140701  
• JP 2015065864 W 20150602

Abstract (en)  
[origin: EP3165623A1] An object of the present invention is to provide a wire rod for a steel wire, which is excellent in low cycle fatigue characteristics and is useful as a material for a high-strength steel wire such as a wire rope or a PC steel wire, and to provide a steel wire that can exhibit such characteristics. A wire rod for a steel wire of the present invention comprises by mass: C: 0.70 to 1.3%; Si: 0.1 to 1.5%; Mn: 0.1 to 1.5%; N: 0.001 to 0.006%; Al: 0.001 to 0.10%; Ti: 0.02 to 0.20%; B: 0.0005 to 0.010%; P: 0% or more and 0.030% or less; and S: 0% or more and 0.030% or less, with the balance being iron and inevitable impurities, wherein, the wire rod having pearlite as a main phase and a hydrogen diffusion coefficient D in steel at 300 °C satisfies formula (1) below:  $D \# 2.5 \times 10^{-7} \text{ cm}^2 / \text{sec}$

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 8/06** (2006.01); **C21D 8/08** (2006.01); **C21D 9/52** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/10** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP KR US)  
**C22C 38/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP KR US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/06** (2013.01 - EP KR US); **C22C 38/105** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP KR US); **C22C 38/16** (2013.01 - EP US); **C22C 38/28** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/54** (2013.01 - EP US); **D07B 5/00** (2013.01 - US); **C21D 8/06** (2013.01 - EP US); **C21D 8/08** (2013.01 - EP US); **C21D 9/52** (2013.01 - EP US); **C21D 2211/009** (2013.01 - KR); **D07B 2201/2001** (2013.01 - US)

Citation (search report)  
• [X] JP 2013204069 A 20131007 - KOBE STEEL LTD  
• [X] JP 2008007856 A 20080117 - NIPPON STEEL CORP  
• [A] JP 2007039800 A 20070215 - NIPPON STEEL CORP  
• [A] JP H11199978 A 19990727 - KOBE STEEL LTD  
• [E] EP 2990499 A1 20160302 - NIPPON STEEL & SUMITOMO METAL CORP [JP]  
• See references of WO 2016002414A1

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 3165623 A1 20170510; EP 3165623 A4 20180404**; CA 2951781 A1 20160107; CN 106471146 A 20170301; CN 106471146 B 20180316; JP 2016014169 A 20160128; KR 20170012467 A 20170202; MX 2016017015 A 20170512; US 2017130303 A1 20170511; WO 2016002414 A1 20160107

DOCDB simple family (application)  
**EP 15814419 A 20150602**; CA 2951781 A 20150602; CN 201580034206 A 20150602; JP 2014136223 A 20140701; JP 2015065864 W 20150602; KR 20167036838 A 20150602; MX 2016017015 A 20150602; US 201515322686 A 20150602