

Title (en)

Cr-CONTAINING STEEL EXCELLENT IN THERMAL FATIGUE CHARACTERISTICS

Title (de)

CR-HALTIGER STAHL MIT HERVORRAGENDEN WÄRMEERMÜDUNGSEIGENSCHAFTEN

Title (fr)

ACIER AU CHROME PRÉSENTANT UNE EXCELLENTE RÉSISTANCE À LA FATIGUE THERMIQUE

Publication

EP 2036994 B1 20120104 (EN)

Application

EP 07767965 A 20070625

Priority

- JP 2007063185 W 20070625
- JP 2006184028 A 20060704
- JP 2006306078 A 20061113
- JP 2007141481 A 20070529

Abstract (en)

[origin: EP2036994A1] The present invention provides Cr-containing steel superior in heat fatigue characteristics, that is, Cr-containing steel superior in heat fatigue characteristics, characterized by containing, by mass%, C: 0.01% or less, N: 0.015% or less, Si: 0.8 to 1.0%, Mn: 0.2 to 1.5%, P: 0.03% or less, S: 0.01% or less, Ni: 0.2% or less, Cu: 0.2% or less, Cr: 13 to 15%, Mo: 0.1% or less, Nb: 0.3 to 0.5%, Ti: 0.05 to 0.2%, V: 0.01 to 0.2%, Al: 0.015 to 1.0%, and B: 0.0002 to 0.0010%, satisfying $(Nb+1.9 \times Ti)/(C+N) \leq 50$, and having a balance of Fe and unavoidable impurities, wherein a 0.2% yield strength at 800°C after aging at 800°C for 100 hours or more is 20 MPa or more and a drawability value at 200°C is 35% or more and wherein a soluble Nb amount+soluble Ti amount after aging at 800°C for 100 hours or more is 0.08% or more.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 9/46** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP KR US)

C21D 6/002 (2013.01 - EP KR US); **C21D 9/08** (2013.01 - KR); **C21D 9/46** (2013.01 - EP US); **C22C 38/004** (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 38/24** (2013.01 - EP KR US); **C22C 38/26** (2013.01 - EP KR US); **C22C 38/28** (2013.01 - EP KR US); **C22C 38/32** (2013.01 - EP KR US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **F01N 13/16** (2013.01 - KR); **C21D 9/08** (2013.01 - EP US); **C21D 2211/004** (2013.01 - EP KR US); **F01N 13/16** (2013.01 - EP US)

Cited by

EP3187609A4

Designated contracting state (EPC)

DE FR

DOCDB simple family (publication)

EP 2036994 A1 20090318; **EP 2036994 A4 20110420**; **EP 2036994 B1 20120104**; CN 101346487 A 20090114; CN 101346487 B 20120704; JP 2008144263 A 20080626; JP 5208450 B2 20130612; KR 20080038218 A 20080502; US 2010218856 A1 20100902; WO 2008004506 A1 20080110

DOCDB simple family (application)

EP 07767965 A 20070625; CN 200780000960 A 20070625; JP 2007063185 W 20070625; JP 2007141481 A 20070529; KR 20087006108 A 20080313; US 99187307 A 20070625