

Title (en)
Bainitic steel for rock drilling component

Title (de)
Bainitstahl für Gesteinsbohrkomponenten

Title (fr)
Acier bainitique pour composant de forage de roches

Publication
EP 2746419 A1 20140625 (EN)

Application
EP 12198569 A 20121220

Priority
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Abstract (en)
A bainitic steel comprising, in weight% (wt%): C: 0.16 - 0.23 Si: 0.8 - 1.0 Mo: 0.67 - 0.9 Cr: 1.10 - 1.30 V: 0.1 - 0.4 Ni: 1.60 - 2.0 Mn: 0.65 - 0.9 P: # 0.020 S: # 0.02 Cu: < 0.20 N: < 0.012 balance Fe and unavoidable impurities.

IPC 8 full level
C22C 38/02 (2006.01); **C21D 9/14** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **E21B 17/02** (2006.01)

CPC (source: EP RU US)
C21D 1/20 (2013.01 - EP US); **C21D 6/004** (2013.01 - EP US); **C21D 6/005** (2013.01 - EP US); **C21D 6/008** (2013.01 - EP US); **C21D 9/0075** (2013.01 - EP US); **C21D 9/14** (2013.01 - RU); **C21D 9/22** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP RU US); **E21B 17/02** (2013.01 - RU); **E21B 17/22** (2013.01 - US); **C21D 2211/002** (2013.01 - EP US)

Citation (applicant)
• WO 9727022 A1 19970731 - SANDVIK AB [SE]
• WO 9727002 A1 19970731 - SOUTHWEST RES INST [US]

Citation (search report)
• [X] WO 9749520 A1 19971231 - SANDVIK AB [SE]
• [X] WO 9748516 A1 19971224 - SANDVIK AB [SE]
• [XD] WO 9727022 A1 19970731 - SANDVIK AB [SE]
• [A] CN 102191435 A 20110921 - HUBEI JIAYU PIPE CO LTD
• [A] US 5988301 A 19991123 - LUNDELL LARS-GUNNAR [SE]
• [A] JP 2011074427 A 20110414 - DAIDO STEEL CO LTD
• [A] US 2009266615 A1 20091029 - YAO JING JAMES [CA]

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CN112322981A; WO2021185853A1; WO2021224423A1

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2746419 A1 20140625; AU 2013363743 A1 20150806; AU 2013363743 B2 20160204; BR 112015014607 B1 20190903; CA 2893669 A1 20140626; CA 2893669 C 20201103; CL 2015001782 A1 20160205; CN 104870677 A 20150826; CN 104870677 B 20160921; EP 2935639 A1 20151028; EP 2935639 B1 20161116; ES 2613684 T3 20170525; JP 2016506451 A 20160303; JP 5937279 B2 20160622; KR 102021002 B1 20190911; KR 20150097771 A 20150826; MX 2015007969 A 20151022; MX 345499 B 20170202; PE 20151034 A1 20150715; PL 2935639 T3 20170531; PT 2935639 T 20170221; RU 2015129500 A 20170124; RU 2669665 C2 20181012; US 2015344997 A1 20151203; US 2018105905 A1 20180419; WO 2014095747 A1 20140626; ZA 201504148 B 20210929

DOCDB simple family (application)
EP 12198569 A 20121220; AU 2013363743 A 20131216; BR 112015014607 A 20131216; CA 2893669 A 20131216; CL 2015001782 A 20150619; CN 201380067650 A 20131216; EP 13811174 A 20131216; EP 2013076740 W 20131216; ES 13811174 T 20131216; JP 2015548412 A 20131216; KR 20157019664 A 20131216; MX 2015007969 A 20131216; PE 2015001048 A 20131216; PL 13811174 T 20131216; PT 13811174 T 20131216; RU 2015129500 A 20131216; US 201314653486 A 20131216; US 201715839588 A 20171212; ZA 201504148 A 20150609