

Title (en)

High strength steel alloy and strip and sheet product made therefrom

Title (de)

Hochfeste Stahllegierung und daraus hergestelltes Band- und Blechprodukt

Title (fr)

Alliage d'acier à haute résistance et feuille de bande et produit fabriqué à partir de celui-ci

Publication

EP 2886675 A3 20150805 (EN)

Application

EP 14199446 A 20141219

Priority

US 201361919081 P 20131220

Abstract (en)

[origin: EP2886675A2] An alloy is disclosed that provides a unique combination of very high strength, toughness, and ductility. The alloy can be characterized by the following weight percent composition. C 0.3-0.6 Mn 3.0-4.5 Si 1.0-2.0 Cr 0.6-2.5 Ni 0.6-2.5 Mo+ $\frac{1}{2}$ W Up to 0.5 Cu 0.3-1.0 Co 0.01 max. V+ 5/9 Nb 0.1-0.5 Ti 0.025 max. Al 0.025 max. Ca 0.005 max. N 0.02 max. The balance is iron and the usual impurities, wherein the impurities include not more than about 0.03% phosphorus and not more than about 0.003% sulfur. The alloy is further defined by containing Si, Cu, V, and optionally Nb such that $2 \leq \frac{(\%Si + \%Cu)}{(\%V + (5/9) \times \%Nb)} \leq 34$.

IPC 8 full level

C22C 38/58 (2006.01); **C21D 6/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/34** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01)

CPC (source: EP US)

C21D 1/18 (2013.01 - EP US); **C21D 6/004** (2013.01 - EP US); **C21D 6/005** (2013.01 - EP US); **C21D 8/0263** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP 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); **C22C 38/52** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); **C21D 1/58** (2013.01 - EP US)

Citation (search report)

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- [XA] EP 2543747 A1 20130109 - KOBE STEEL LTD [JP]
- [XA] JP H11269541 A 19991005 - NISSHIN STEEL CO LTD
- [A] WO 2012153831 A1 20121115 - NHK SPRING CO LTD [JP], et al
- [A] EP 2397571 A1 20111221 - NHK SPRING CO LTD [JP], et al
- [A] EP 1975266 A1 20081001 - KOBE STEEL LTD [JP], et al
- [A] JP 2010116593 A 20100527 - KOBE STEEL LTD
- [A] JP 2012001802 A 20120105 - SUMITOMO METAL IND
- [A] JP H11229075 A 19990824 - SUMITOMO METAL IND

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 2886675 A2 20150624; **EP 2886675 A3 20150805**; **EP 2886675 B1 20190522**; ES 2743175 T3 20200218; JP 2015134962 A 20150727; JP 6099103 B2 20170322; PL 2886675 T3 20191129; US 2015176109 A1 20150625; US 2019048447 A1 20190214

DOCDB simple family (application)

EP 14199446 A 20141219; ES 14199446 T 20141219; JP 2014257823 A 20141219; PL 14199446 T 20141219; US 201414572888 A 20141217; US 201816161808 A 20181016