

Title (en)
HIGH CHROMIUM MARTENSITIC HEAT-RESISTANT STEEL WITH COMBINED HIGH CREEP RUPTURE STRENGTH AND OXIDATION RESISTANCE

Title (de)
HOCHCHROMHALTIGER MARTENSITISCHER, HITZEBESTÄNDIGER STAHL MIT KOMBINierter HOHER ZEITSTANDFESTIGKEIT UND OXIDATIONSBESTÄNDIGKEIT

Title (fr)
ACIER MARTENSITIQUE RÉSISTANT À LA CHALEUR À HAUTE TENEUR EN CHROME À HAUTE RÉSISTANCE À LA RUPTURE PAR FLUAGE ET RÉSISTANCE À L'OXYDATION COMBINÉES

Publication
EP 3485046 A1 20190522 (EN)

Application
EP 17743278 A 20170712

Priority
• EP 16179114 A 20160712
• EP 2017067613 W 20170712

Abstract (en)
[origin: EP3269831A1] Martensitic heat-resistant steel for boiler applications with a unique combination of enhanced creep strength and excellent oxidation resistance upon high temperature exposure in steam containing environments., having the following melt analysis (in wt.-%): C: 0.10 to 0.16%, Si: 0.20 to 0.60%, Mn: 0.30 to 0.80%, P #=0.020%, S #=0.010%, Al #=0.020%, Cr: 10.5 to 12.00%, Mo: 0.10 to 0.60%, V: 0.15 to 0.30%, Ni: 0.10 to 0.40%, B: 0.008 to 0.015%, N:0.002 to 0.020%, Co: 1.50 to 3.00%, W: 1.50 to 2.50%, Nb: 0.02 to 0.07%, Ti: 0.001-0.020%. The balance of the steel consists of iron and unavoidable impurities. The steel is normalized for a period of about 10 to about 120 minutes in the temperature range between 1050 °C and 1170°C and cooled down in air or water to room temperature, and then tempered for at least one hour in the temperature range between 750 °C and 820 °C. It exhibits martensitic microstructure with average δ -ferrite content of less than 5 vol.-%.

IPC 8 full level
C21D 8/02 (2006.01); **C21D 8/10** (2006.01); **C21D 9/08** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/10** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/18** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/52** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EA EP KR US)
C21D 6/002 (2013.01 - EA EP KR US); **C21D 6/004** (2013.01 - EP US); **C21D 6/005** (2013.01 - EP US); **C21D 6/007** (2013.01 - EP US); **C21D 6/008** (2013.01 - EP US); **C21D 8/0226** (2013.01 - KR); **C21D 8/0263** (2013.01 - KR); **C21D 8/105** (2013.01 - EA EP KR US); **C21D 9/08** (2013.01 - EA EP US); **C21D 9/085** (2013.01 - EA EP KR US); **C22C 38/001** (2013.01 - EA EP KR US); **C22C 38/02** (2013.01 - EA EP KR US); **C22C 38/04** (2013.01 - EA EP KR US); **C22C 38/06** (2013.01 - EP US); **C22C 38/105** (2013.01 - EA EP KR US); **C22C 38/12** (2013.01 - EA EP KR US); **C22C 38/14** (2013.01 - EA EP US); **C22C 38/18** (2013.01 - EA EP US); **C22C 38/44** (2013.01 - EA EP US); **C22C 38/46** (2013.01 - EA EP KR US); **C22C 38/48** (2013.01 - EA EP KR US); **C22C 38/50** (2013.01 - EA EP KR US); **C22C 38/52** (2013.01 - EA EP KR US); **C22C 38/54** (2013.01 - EA EP US); **C21D 8/0226** (2013.01 - EA EP US); **C21D 8/0263** (2013.01 - EA EP US); **C21D 2211/005** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EA EP KR US)

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