

Title (en)  
STEEL PLATE HAVING EXCELLENT HYDROGEN-INDUCED-CRACKING RESISTANCE AND TOUGHNESS, AND STEEL TUBE FOR LINE PIPE

Title (de)  
STAHLPLATTE MIT AUSGEZEICHNETER BESTÄNDIGKEIT GEGENÜBER WASSERSTOFFINDUZIERTER RISSBILDUNG UND ZÄHIGKEIT  
SOWIE LEITUNGSSTAHLROHR

Title (fr)  
TÔLE D'ACIER PRÉSENTANT UNE EXCELLENTE RÉSISTANCE AUX FISSURATIONS INDUITES PAR L'HYDROGÈNE ET UNE EXCELLENTE  
TÉNACITÉ AINSI QUE TUBE D'ACIER POUR UN TUBE DE CANALISATION

Publication  
**EP 3018231 A4 20170322 (EN)**

Application  
**EP 14819986 A 20140625**

Priority  
• JP 2013138178 A 20130701  
• JP 2014066852 W 20140625

Abstract (en)  
[origin: EP3018231A1] The present invention provides a steel plate having demonstrably excellent hydrogen-induced cracking resistance and toughness. The steel plate is characterized in including, in percent by mass, 0.02-0.15% of C, 0.02-0.50% of Si, 0.6-2.0% of Mn, more than 0% and up to 0.030% of P, more than 0% and up to 0.003% of S, 0.010-0.08% of Al, 0.0003-0.0060% of Ca, 0.001-0.01% of N, and more than 0% and no more than 0.0045% of O, the balance comprising iron and unavoidable impurities; the mass ratio of Ca to S (Ca/S) being at least 2.0; the amounts of Ca, S, and O satisfying the equation  $(Ca-1.25 S)/O \geq 1.80$ ; and the Ar gas content of the steel being no greater than 0.5  $\mu\text{L}/\text{cm}^3$ .

IPC 8 full level  
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**C22C 38/58** (2006.01)

CPC (source: EP KR)  
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**C22C 38/001** (2013.01 - KR); **C22C 38/02** (2013.01 - KR); **C22C 38/04** (2013.01 - EP KR); **C22C 38/06** (2013.01 - EP KR);  
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Citation (search report)  
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• [A] CN 102732666 A 20121017 - SHOUGANG CORP  
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• [A] JP 2914138 B2 19990628  
• See references of WO 2015002046A1

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