

Title (en)

Use of austenitic stainless steel for applications requiring anti-coking properties

Title (de)

Verwendung eines rostfreien austenitischen Stahls für Anwendungen, die Anti-Verkokungseigenschaften fordern

Title (fr)

Utilisation d'aciers inoxydables austénitiques dans des applications nécessitant des propriétés anti-cokage

Publication

EP 1223230 A1 20020717 (FR)

Application

EP 01403294 A 20011219

Priority

FR 0100469 A 20010115

Abstract (en)

Stainless steel used for the production or coating of equipment and having improved anti-coking properties comprises (in weight %): C at most 0.15, preferably at most 0.1; Mn 2-10, preferably 5-10; Ni at most 2; Cu at most 4; N 0.1-0.4; Cr 10-20, preferably 15-18; Si at most 1; Mo at most 3; and Ti at most 0.7. The steel may also include (in weight %): S at most 0.01, preferably at most 0.003; P at most 0.05, preferably at most 0.045; B at most 0.005, preferably 0.0005-0.005; Nb at most 1.1, V at most 0.40; Al at most 0.05; and Ca at most 0.002. Independent claims are given for: (a) Equipment or part of equipment fabricated from the steel; (b) Equipment or part of equipment coated with the steel; (c) A method of fabricating part of equipment where the part is made up of whole components; (d) A method of coating equipment or part of equipment by co-spinning, plasma coating, physical vapor deposition, chemical vapor deposition, electrolytic deposition, 'overlay', and plating; and (e) Use of the equipment for a petrochemical process at 350-1100 degrees C, especially catalytic reforming at 450-650 degrees C, and dehydrogenation of isobutane to isobutene at 550-700 degrees C.

Abstract (fr)

Un acier inoxydable austénitique dont la composition comprend : au plus 0,15 % de C ; de 2 % à 10 % de Mn ; au plus 2 % de Ni ; au plus 4 % de Cu ; de 0,1 à 0,4 % de N ; de 10 à 20 % de Cr ; au plus 1 % de Si ; au plus 3 % de Mo ; et au plus 0,7 % de Ti est utilisé pour la fabrication d'appareillages, par exemple de fours, de réacteurs ou de conduites, ou d'éléments de ces appareillages, ou encore pour le revêtement des parois internes de tels appareillages, lesdits appareillages étant utilisés dans la mise en oeuvre de procédés pétrochimiques qui se déroulent à des températures de 350 °C à 1100 °C et dans lesquels du coke peut se former.

IPC 1-7

C22C 38/58; **C22C 38/42**; **C22C 38/44**; **C22C 38/50**

IPC 8 full level

C07C 5/327 (2006.01); **C07C 11/09** (2006.01); **C10G 35/00** (2006.01); **C10G 75/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/38** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR US)

C22C 38/001 (2013.01 - EP US); **C22C 38/38** (2013.01 - KR); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); **Y10S 585/92** (2013.01 - EP US); **Y10S 585/95** (2013.01 - EP US)

Citation (search report)

- [AD] FR 2766843 A1 19990205 - USINOR [FR]
- [AD] US 5693155 A 19971202 - MOUSSEAU VALERIE [FR], et al
- [A] EP 0949347 A1 19991013 - INST FRANCAIS DU PETROLE [FR]
- [A] US 3756807 A 19730904 - HOSHINO K, et al
- [A] FR 2071667 A5 19710917 - NISSHIN STEEL CO LTD
- [A] GB 506905 A 19390606 - KRUPP AG
- [A] EP 0750053 A1 19961227 - SUMITOMO METAL IND [JP]

Cited by

CN110699612A; FR2851774A1; FR3047254A1; EA037307B1; AU2017215159B2; US11685981B2; WO2017134396A1; US7442264B2

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

EP 1223230 A1 20020717; FR 2819526 A1 20020719; FR 2819526 B1 20030926; JP 2002285299 A 20021003; JP 2009149994 A 20090709; JP 5171687 B2 20130327; KR 20020061507 A 20020724; NO 20020170 D0 20020114; NO 20020170 L 20020716; US 2002129876 A1 20020919; US 6824672 B2 20041130

DOCDB simple family (application)

EP 01403294 A 20011219; FR 0100469 A 20010115; JP 2002005437 A 20020115; JP 2009040470 A 20090224; KR 20020001599 A 20020111; NO 20020170 A 20020114; US 4509202 A 20020115