

Title (en)

Method of increasing resistance to stress corrosion cracking of austenitic stainless steels

Title (de)

Verfahren zur Erhöhung der Spannungsrissskorrosionsbeständigkeit von austenitischen Edelstählen

Title (fr)

Procédé d'amélioration de la tenue à la corrosion sous contraintes des aciers inoxydables austénitiques

Publication

**EP 2100977 A1 20090916 (EN)**

Application

**EP 09154817 A 20090311**

Priority

US 4747108 A 20080313

Abstract (en)

A method of providing resistance to intergranular stress corrosion cracking in an alloy material, the method comprising sensitizing the alloy to form carbides (22), allowing the carbides to precipitate, and applying a heat treatment to replenish a chromium-depleted zone (24).

IPC 8 full level

**C21D 6/02** (2006.01); **C21D 1/00** (2006.01); **C21D 6/00** (2006.01)

CPC (source: EP US)

**C21D 1/26** (2013.01 - EP US); **C21D 6/004** (2013.01 - EP US); **C21D 6/02** (2013.01 - EP US); **C22C 19/05** (2013.01 - EP US); **C22C 19/058** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/40** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C21D 9/50** (2013.01 - EP US); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/004** (2013.01 - EP US)

Citation (search report)

- [X] US 4168994 A 19790925 - OWENS CLARK M
- [X] JP S60197816 A 19851007 - MITSUBISHI HEAVY IND LTD
- [X] JP S5469516 A 19790604 - HITACHI LTD
- [X] STEFEC, RUDOLF: "Structure corrosion of alloyed austenite", KORROSION (DRESDEN) , 11(6), 303-10 CODEN: KRRSAU; ISSN: 0368-6752, 1980, XP009119269
- [X] DEVINE ET AL: "Kinetics of sensitization and de-sensitization of duplex 308 stainless steel", ACTA METALLURGICA, PERGAMON PRESS, US, vol. 36, no. 6, 1 June 1988 (1988-06-01), pages 1491 - 1501, XP024024733, ISSN: 0001-6160, [retrieved on 19880601]
- [X] DATABASE CA [online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 22 April 2001 (2001-04-22), BROWN, HIRAM: "Carbides in 310 stainless steel", XP002535099, retrieved from STN Database accession no. 1954:56254 & BROWN, HIRAM: "Carbides in 310 stainless steel", STEEL (CLEVELAND) , 135(NO. 3;NO. 4), 106-8;92-4 CODEN: STELAC, 1954, XP009119349
- [X] WHITE, WILLIAM E. ET AL: "Metallographic observations on the formation and occurrence of ferrite, sigma phase, and carbides in austenitic stainless steels. I. AISI type 310 stainless steel", METALLOGRAPHY , 3(1), 35-50 CODEN: MEIJAP; ISSN: 0026-0800, 1970, XP023901147
- [X] WHITE, WILLIAM E. ET AL: "Metallographic observations on the formation and occurrence of ferrite, sigma phase, and carbides in austenitic stainless steels. II. AISI type 316 stainless steel", METALLOGRAPHY , 3(1), 51-60 CODEN: MEIJAP; ISSN: 0026-0800, 1970, XP024083071
- [X] WHITE, W. E. ET AL: "Metallographic observations on the formation and occurrence of ferrite, sigma phase, and carbides in austenitic stainless steels. III. Electron microscopy studies", METALLOGRAPHY , 5(4), 333-45 CODEN: MEIJAP; ISSN: 0026-0800, 1972, XP024354896

Cited by

EP3253898A4; EP2760977A4; US9296958B2

Designated contracting state (EPC)

DE ES IT

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

**EP 2100977 A1 20090916**; CN 101532075 A 20090916; US 2009229714 A1 20090917

DOCDB simple family (application)

**EP 09154817 A 20090311**; CN 200910127528 A 20090312; US 4747108 A 20080313