

Title (en)

Corrosion inhibiting of stainless steel in organic sulphononic acid

Title (de)

Korrosionsinhibierung von rostfreiem Stahl in organische Sulfonsäuren

Title (fr)

Inhibition de la corrosion des aciers inoxydables en milieu acide organosulfonique

Publication

EP 0931854 A1 19990728 (FR)

Application

EP 98403065 A 19981207

Priority

FR 9800791 A 19980126

Abstract (en)

Stainless steel is protected against organosulfonic acid corrosion by adding a specified oxidizing agent to the acid. Stainless steel is protected against corrosion by an organosulfonic acid by adding an oxidizing agent selected from the salts or oxides of cerium (IV), iron (III), molybdenum (VI) or vanadium (V), nitrites and persulfates to an aqueous solution of the acid. An Independent claim is also included for an aqueous organosulfonic acid solution containing the oxidizing agent described above in amount such that its spontaneous potential, measured by a stainless steel electrode, is located in the passivity zone determined under the same conditions but in the absence of the oxidizing agent. Preferred Features: The oxidizing agent addition comprises 1×10^{-4} to 1 (especially 0.001-0.5) mole/l alkali metal (especially sodium) nitrite; 1×10^{-5} to 1×10^{-1} (especially 1×10^{-4} to 5×10^{-2}) mole/l Ce^{4+} ions; or 1×10^{-3} to 2×10^{-2} (especially 5×10^{-3} to 1×10^{-2}) mole/l each of a molybdenum (VI) salt and a cerium (IV) salt.

Abstract (fr)

Pour éviter la corrosion des aciers inoxydables en milieu acide organosulfonique, on ajoute au milieu au moins un oxydant choisi parmi les sels ou oxydes de cérium (IV), fer (III), molybdène (VI) ou vanadium (V), les nitrites et les persulfates, en une quantité suffisante pour placer le potentiel spontané entre les potentiels de passivité et de transpassivation.

IPC 1-7

C23F 11/04

IPC 8 full level

C23F 11/18 (2006.01); **C23F 11/04** (2006.01)

CPC (source: EP KR US)

C23C 22/40 (2013.01 - EP); **C23C 22/50** (2013.01 - EP); **C23F 11/04** (2013.01 - EP KR US); **C23F 11/18** (2013.01 - KR)

Citation (search report)

- [Y] FR 1012474 A 19520710 - ELECTRO CHIMIE SOC D
- [X] US 4957653 A 19900918 - CORDANI JOHN L [US]
- [A] US 4339617 A 19820713 - IMAI TAMOTSU, et al
- [A] US 2793191 A 19570521 - STREICHER MICHAEL A
- [DY] PATENT ABSTRACTS OF JAPAN vol. 096, no. 002 29 February 1996 (1996-02-29)
- [Y] STERN M.: "The mechanism of passivating-type inhibitors", JOURNAL OF THE ELECTROCHEMICAL SOCIETY., vol. 105, no. 11, 1 November 1958 (1958-11-01), MANCHESTER, NEW HAMPSHIRE US, pages 638 - 647, XP002078786
- [X] PATENT ABSTRACTS OF JAPAN vol. 015, no. 080 (C - 0810) 25 February 1991 (1991-02-25)
- [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 034 (C - 150) 10 February 1983 (1983-02-10)

Cited by

WO2019043339A1; EP1191073A3; FR3070694A1; FR3070687A1; CN111051279A; WO0129285A3; US11788192B2; WO2019043338A1; US11040940B2; US11447450B2; WO2019043340A1

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB IE IT LI LU NL PT SE

DOCDB simple family (publication)

EP 0931854 A1 19990728; AR 017916 A1 20011024; AU 9824998 A 19990812; BR 9900020 A 19991214; CA 2253679 A1 19990726; IL 127403 A0 19991028; IL 127403 A 20010520; JP H11241191 A 19990907; KR 19990066898 A 19990816; TW 457304 B 20011001; US 6120619 A 20000919

DOCDB simple family (application)

EP 98403065 A 19981207; AR P980106513 A 19981218; AU 9824998 A 19981231; BR 9900020 A 19990107; CA 2253679 A 19981203; IL 12740398 A 19981204; JP 34865898 A 19981208; KR 19980061582 A 19981230; TW 87121449 A 19981222; US 22895399 A 19990112