

Publication

**EP 0693139 A4 19960207**

Application

**EP 94913306 A 19940328**

Priority

- JP 8088393 A 19930407
- US 9403225 W 19940328

Abstract (en)

[origin: WO9423089A1] An acidic substitutional plating bath for zinciferous surfaces, particularly zinciferous metal-plated steel sheet, with which sludge production and equipment corrosion are inhibited and which has an improved heavy metal ion deposition efficiency is provided by an aqueous composition that has a pH of 2 to 4.5 and that contains 1.5 to 40 g/L of at least one heavy metal ion selected from nickel, iron, and cobalt; 0.5 to 10 g/L of phosphate ions; 1 to 250 g/L of sulfate ion; and 1 to 20 g/L of organic acid.

IPC 1-7

**C23C 22/07**

IPC 8 full level

**C23C 18/32** (2006.01); **C23C 22/78** (2006.01)

CPC (source: EP)

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Citation (search report)

- No further relevant documents disclosed
- See references of WO 9423089A1

Cited by

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DOCDB simple family (publication)

**WO 9423089 A1 19941013**; AT E168728 T1 19980815; CA 2158856 A1 19941013; CN 1065574 C 20010509; CN 1093415 A 19941012; DE 69411902 D1 19980827; DE 69411902 T2 19990408; EP 0693139 A1 19960124; EP 0693139 A4 19960207; EP 0693139 B1 19980722; JP 2968147 B2 19991025; JP H06293973 A 19941021; TW 301675 B 19970401

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**US 9403225 W 19940328**; AT 94913306 T 19940328; CA 2158856 A 19940328; CN 94104596 A 19940407; DE 69411902 T 19940328; EP 94913306 A 19940328; JP 8088393 A 19930407; TW 83102839 A 19940331