

Title (en)
IMPROVEMENT OF ZINC PHOSPHATE TREATMENT FOR COLD WORKING

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EP 0363200 A3 19900718 (EN)

Application
EP 89310196 A 19891005

Priority
JP 25243588 A 19881006

Abstract (en)
[origin: EP0363200A2] The present invention provides a zinc phosphating method for cold working which hardly produces sludge and can be carried out in a short period of time. The method comprises treating a steel material with a surface conditioning solution comprising 1 to 20 ppm of titanium ion and having a pH of 8 to 11, and then treating it with a chemical solution comprising zinc ion in a concentration of 1 to 20 g/l, phosphate ion in a concentration of at least 5 g/l, nitrate ion in a concentration sufficient to have a concentration ratio of phosphate ion / nitrate ion of at least 1/3, pyrophosphate or tripolyphosphate ion in a concentration of 0.2 to 2 g/l, Fe (II) ion in a concentration of 0.1 to 20 g/l and a material decomposing nitrite ion and not oxidizing the Fe (II) ion in a concentration of at least 0.05 g/l.

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CPC (source: EP KR)
C23C 22/23 (2013.01 - EP KR)

Citation (search report)
• [Y] EP 0045110 A1 19820203 - METALLGESELLSCHAFT AG [DE], et al
• [Y] US 3671332 A 19720620 - RAUSCH WERNER, et al
• [A] US 3923554 A 19751202 - ZIEMBA VICTOR F
• [A] DE 1062082 B 19590723 - METALLGESELLSCHAFT AG
• [A] FR 2323776 A1 19770408 - PARKER STE CONTINENTALE [FR]
• [A] CHEMICAL ABSTRACTS, vol. 109, no. 26, December 1988, page 255, abstract no. 235087s, Columbus, Ohio, US; & JP-A-63 130 781 (NIPPON PAINT CO., LTD) 02-06-1988

Cited by
EP0979880A1; US6068710A; EP0946786A4; US5908512A; US5370909A; CN113677826A; US6309477B1; WO9504842A1; WO9119828A1

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