

Title (en)  
SYSTEM FOR NICKEL-FREE ZINC PHOSPHATE PRETREATMENT

Title (de)  
SYSTEM ZUR NICKELFREIEN ZINKPHOSPHATVORBEHANDLUNG

Title (fr)  
SYSTÈME DE PRÉTRAITEMENT DE PHOSPHATE DE ZINC SANS NICKEL

Publication  
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Application  
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Priority

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Abstract (en)  
Disclosed is a substrate pretreatment system, comprising (a) an activating rinse for treating at least a portion of a substrate comprising a dispersion of metal phosphate particles having a  $D_{90}$  particle size of no greater than 10  $\mu\text{m}$ , wherein the metal phosphate comprises divalent or trivalent metals or combinations thereof; and (b) a pretreatment composition for treating at least a portion of the substrate treated with the activating rinse, comprising zinc ions and phosphate ions, wherein the pretreatment composition is substantially free of nickel. Methods of treating a substrate with the substrate pretreatment system also are disclosed. Substrates treated with the substrate pretreatment system also are disclosed.

IPC 8 full level  
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Citation (search report)

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- [X] WO 0005066 A1 20000203 - HENKEL CORP [US], et al
- [X] US 2007240604 A1 20071018 - INBE TOSHIO [JP], et al
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Designated contracting state (EPC)  
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**US 2017306497 A1 20171026**; AU 2017257846 A1 20181122; BR 112018071921 A2 20190205; CA 3021999 A1 20171102; CN 109072443 A 20181221; CN 109072443 B 20201106; EP 3449035 A1 20190306; EP 3449035 B1 20240228; EP 4353867 A2 20240417; EP 4353867 A3 20240710; ES 2972322 T3 20240612; KR 20190002546 A 20190108; KR 20210114550 A 20210923; MX 2018012976 A 20190117; RU 2018141232 A 20200526; RU 2018141232 A3 20200526; RU 2728341 C2 20200729; SG 11201808794Q A 20181129; WO 2017189627 A1 20171102

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