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(54) **SYSTEM FOR NICKEL-FREE ZINC PHOSPHATE PRETREATMENT**

(57) 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 D₉₀ particle size of no greater than 10 μm, wherein the metal phosphate comprises divalent or trivalent metals or combinations thereof; and (b) a pretreatment composition for treating at least a por-

tion 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.

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 June 2024	Examiner Handrea-Haller, M
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