

Title (en)

ELECTROPLATING FORMULATION AND PROCESS FOR PLATING IRON DIRECTLY ONTO ALUMINUM OR ALUMINUM ALLOYS

Title (de)

ELEKTOPLATTIERUNGSFORMULIERUNG UND PROZESS ZUR PLATTIERUNG VON EISEN DIREKT AUF ALUMINIUM ODER ALUMINIUM-
LEGIERUNGEN

Title (fr)

FORMULATION D'ELECTROPLACAGE ET PROCEDE DE DEPOT DE FER PAR ELECTROPLACAGE DIRECTEMENT SUR DE L'ALUMINIUM
OU D'ALLIAGES D'ALUMINIUM

Publication

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Application

EP 99905554 A 19990201

Priority

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Abstract (en)

[origin: WO9945178A1] An electroplating formulation and process that employs an iron plating/activating bath which acts as both a chemical activation bath to activate the aluminum or aluminum alloy substrate and acts as an electroplating bath for depositing a hard iron layer directly onto the aluminum or aluminum alloy substrate. No separate activation bath, no transitory layers, and no separate undercoating layers are needed. The activation/electroplating bath solution includes the following: (1) Fe<+2> having a concentration ranging from about 0.65 to about 2.5 moles per liter of solution; (2) at least one anion associated with the Fe<+2> ion; (3) a reducing agent in an amount sufficient to prevent oxidation of Fe<+2> to Fe<+3>; (4) Cl<-> in an amount sufficient to promote dissolution of the anode and increase the conductivity of the solution; and (5) a wetting agent in an amount sufficient to prevent pitting of the aluminum electroplated surface. The surface of the aluminum or aluminum alloy substrate cathode is activated by immersing the cathode in the solution. An anode is also immersed in the solution. The iron layer is electroplated directly onto the activated aluminum or aluminum alloy surface of the cathode in the bath solution.

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