

Title (en)

Composition and process for electrodepositing a Zn or Zn/Si/P coating on metal substrates.

Title (de)

Zusammensetzung und Verfahren für das Elektroplattieren einer Zn- oder Zn-Si-P-Beschichtung auf Metallsubstraten.

Title (fr)

Composition et procédé de dépôt électrolytique d'un revêtement de Zn ou de Zn-Si-P sur des substrats métalliques.

Publication

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Application

**EP 85110271 A 19850816**

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Abstract (en)

The present invention provides an aqueous composition and process for electrodespositing a layer of a ductile, strongly adhering, adsorptive and/or absorptive zinc coating or zinc coating comprising silicon and phosphorous on a metal substrate. The electrodeposition composition is prepared by reacting metallic silicon and zinc with phosphoric acid and an alkali metal hydroxide in the ratio of between 0,4 and 1,3 moles of alkali metal hydroxide per mole of phosphorus acid, and adjusting the solution to a pH of 1 or higher after completion of the reaction. The coating is deposited on the metal substrate by electrodeposition and comprises about 70 to 99.5% by weight of zinc, and about 0,1 to 10% by weight of silicon, and about 0,5 to 20% by weight of phosphorus. The resulting Zn/Si/P coating improves the resistance of the metal substrate to corrosion, wear, galling, stress corrosion cracking and cracking during mechanical forming operations. While essentially all metals of industrial importance may be coated, this process is especially important for ferrous metals, steels, stainless steels, copper, aluminium, chromium and titanium.

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