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Anticorrosive properties of epoxy coatings, impregnated with manganese-containing pigments

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Abstract

© Research India Publications 2015. Most inhibiting pigments, imparting high anticonosive properties to the primer modern metal materials, contain extremely oxidated chromium, and as a consequence, are toxic. Search for low-toxic pigments comparable on the effectiveness of the protective effect with chioiniuin-containing pigments remains today an urgent task. As a film-forming material, it was used the epoxy oligomer E-40 being widely applicable in the paint industry epoxy, for which, polyethylene polyamine served as a hardener. Calcining calcium manganite, manganite-co-precipitated calcium silicate, and manganese blue were chosen as anticonosive pigments, the properties of anticonosi*e coating on the basis of epoxy oligomer E-40 pigmented with manganese compounds were investigated. It has been found that inclusion of the synthesized pigment into composition of coatings enhances their ability to inhibit undei'film corrosion of steel. It has been proposed compounds of anticonosive primers on the effectiveness of protective action, surpassing industrial counterparts. The paper investigates influence of the content and nature of manganese anticonosive pigments on the protective properties of epoxy coatings. It has been shown that in the region of pigmentation below the critical, there is an increase of auticonosion efficiency of coatings. It has been evaluated the critical volume content of pigment, developed the formulations of primers, coatings on the basis of which the effectiveness of corrosion exceed the industry analogue.

Keywords

Calcium manganite, Calcium manganite-silicate, Epoxy oligomer E-40, Pigment "permanganic blue" corrosion, Primer, Protection