Corrosion Protection of AS21 Alloy by Coatings Containing Mg/Al Hydrotalcites Impregnated with the Organic Corrosion Inhibitor 2-mercaptobenzimidazole

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This work provides an affordable strategy to enhance the corrosion resistance of hydrotalcite coating by chemical modification of the coating with 2-mercaptobenzimidazole. The corrosion protection of the AS21 alloy immersed in Hank's solution is described by means of coatings containing Mg/Al hydrotalcites impregnated with the organic corrosion inhibitor 2-mercaptobenzimidazole (HT-2-MBI). The effect of the coating concentration on the efficiency of corrosion inhibition was determined using the techniques of electrochemical impedance spectroscopy and polarization curves. A maximum efficiency of 92% was reached after 0.5 hours and 75% in a period of 102 hours.

Keywords: Hydrotalcites, 2-MBI, AS21 alloy, inhibitor, EIS.

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