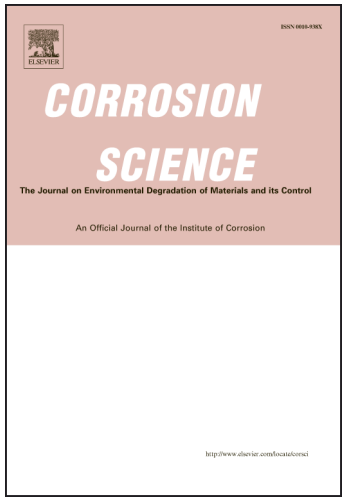

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MoO_4^{2-} as a soluble inhibitor for Zn in neutral and alkaline solutions

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Abstract

The inhibitive action of soluble Na_2MoO_4 on the spontaneous reactivity of hot dip galvanized steel in 0.5 M NaCl was studied at pH 4-13 by a direct measurement of Zn dissolution rate in the flowing electrolyte and postmortem surface analysis. The stability and the composition of Mo-rich films depended on the solution pH and flow conditions. The inhibition efficiency of soluble Mo(VI) correlated with the composition of the films: Mo(V)-rich films were immediately formed under uniform flow at pH 6-12, and the inhibition efficiency of Mo(VI) in these conditions (>92%) was comparable with the efficiency of Cr(VI).