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Short Communication

Corrosion and Inhibition of P110 steel in 20% HCl Solution by Mannich Base Inhibitor

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The corrosion and inhibition behavior of P110 steel in 20% HCl solution with and without Mannich base inhibitor were investigated by electrochemical measurements and soaking experiments. The thermodynamic parameters demonstrated that the dissolution of P110 in HCl solution is an endothermic process. EIS studies indicated that the Mannich base inhibitor can effectively inhibit the corrosion reaction by forming an adsorption layer function as a barrier. Polarization curves indicated that it is mixed type inhibitor which can reduce anodic dissolution and cathodic hydrogen evolution reactions simultaneously.

Keywords: P110 steel, kinetic parameters, thermodynamic parameters, Mannich base, HCl solution

FULL TEXT