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Extended Abstract

Naturally occurring exudates gums as eco-friendly inhibitors for mild steel corrosion in acidic medium

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Abstract

The corrosion inhibition potentials of gum exudates from Daniella oliveri (DO) and Commiphora africana (CA) for the corrosion of mild steel in H2SO4 have been studied using weight loss and thermometric methods at 303 and 333K. Results show that the exudates gums actually reduced the rates of corrosion of mild steel. Increase in the concentrations of the exudates gums increased their percentage inhibition efficiencies. Corrosion rate was found to increase with increase in temperature in the presence and absence of the gum exudates, though the corrosion rate was slower in the presence of the exudates gums. Both DO and CA exudates gums were found to obey Temkin and Langmuir adsorption models at all concentrations and temperatures studied. Physical adsorption mechanism was proposed from the adsorption parameters. Kinetic and thermodynamic parameters revealed that the adsorption process is spontaneous, exothermic and no significant difference was found between the inhibition efficiencies of DO and CA.

Biography

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