

Thiosemicarbazone Derived from 4-Aminoantipyrene as Corrosion Inhibitor

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Abstract : The efficiency of synthesized thiosemicarbazone namely 2-(1,5-dimethyl-4-(2-methylbenzylidene)amino)-2-phenyl-1H-pyrazol-3(2H)-ylidene) hydrazinecarbothioamide investigated as corrosion inhibitor of mild steel in 1N H₂SO₄ using electrochemical impedance spectroscopy (EIS) and potentiodynamic polarization (PD) in addition of scanning electron microscopy (SEM). The results showed that this inhibitor behaved as a good corrosion inhibitor even at low concentration with a mean efficiency of 93%. Polarization technique and EIS were tested in different concentrations reveal that this compound is adsorbed on the mild steel, therefore blocking the active sites and the adsorption follows the Langmuir adsorption isotherm model. SEM shows that mild steel surface is nearly perfect for mild steel which was immersed in a solution of H₂SO₄ with corrosion inhibitor.

Keywords : corrosion inhibitor, thiosemicarbazide, electrochemical impedance, electrochemical impedance spectroscopy

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