

6-phenylpyridazin-3(2H)one as New Corrosion Inhibitor for C38 Steel in 1 M HCl.

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The corrosion behavior of C38 steel in HCl solutions and its inhibition by 6-phenylpyridazin-3(2H)one (PPO) has been studied in different temperature using polarization and electrochemical impedance spectroscopy (EIS) techniques as well as weight loss measurements. The 6-phenylpyridazin-3(2H)one has shown good inhibitive properties and acts as mixed inhibitor as observed in polarization method. The EIS results confirmed the efficiency of tested inhibitor and showed that the charge transfer resistance increase with the rise in the concentration following the same trend of the inhibition efficiency. The effect of the temperature, Langmuir adsorption isotherm and their parameters are discussed to examine the mechanism of the interactions between metal surface and tested compound. A chemisorption mechanism is proposed.

Keywords: C38 steel, corrosion inhibition, 6-phenylpyridazin-3(2H)one, Langmuir.

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