

عنوان مقاله:

Corrosion Inhibition of Mild Steel by Ethanol Extract of Bitter Leaf (*Vernonia Amygdalina*): Effects of Inhibitor Concentration and Time

محل انتشار:

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خلاصه مقاله:

The aim of this study was to test the performance of Bitter Leaf (*Vernonia Amygdalina*) ethanol extract as a corrosion inhibitor for mild steel in ۱.۵ M H₂SO₄ solution. The study measured the weight loss and corrosion rate of mild steel under different inhibitor concentrations (۰.۲۵-۱.۵۰ g/ml) and exposure times (۱-۵ days). The findings indicated that the inhibitor concentration had a positive effect on reducing the weight loss and corrosion rate of mild steel, showing a high inhibition efficiency. On the other hand, the medium without inhibitor had more weight loss and corrosion rate. The study also observed that the weight loss and corrosion rate increased slightly as the exposure time increased, implying that the inhibitor became less effective over time and needed to be regularly replaced. The study used the Langmuir adsorption isotherm model to describe the interaction between the inhibitor molecules and the metal surface. The study demonstrated the corrosion inhibition process of bitter leaf extract on mild steel and emphasized the need to optimize the inhibitor concentration and check its effectiveness over time for corrosion prevention applications.

کلمات کلیدی:

corrosion, Mild steel, ethanol extract, Bitter Leaf, Inhibition

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