

Medicago Sative Plant as Safe Inhibitor on the Corrosion of Steel in 2.0M H₂SO₄ Solution

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Abstract

The inhibitive effect of water and alcoholic extracts of Medicago Sative (MS) on the corrosion of steel in 2.0 M H₂SO₄ containing 10% EtOH has been studied using chemical (weight loss (ML), hydrogen evolution(HE)), electrochemical (potentiodynamic polarization (PDP) and impedance spectroscopy (EIS)) techniques. Also, scanning electron microscopy (SEM) is used to support the obtained results. The results showed that the inhibition efficiency increases with the increase of M. Sative (MS) concentration. The water and alcoholic extracts of MS plant act as mixed type inhibitors with nearly the same efficiency. The inhibition action of M. Sative (MS) extracts was discussed in terms of their horizontal adsorption on the metal surface. The adsorption follows Langmuir adsorption isotherm.

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