Corrosion Inhibition of Mild Steel in Sulfuric Acid Solution by Houttuynia Cordata Extract

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The inhibition performance and mechanism of Houttuynia cordata extract (HCE) for the corrosion of mild steel in 0.5 M H₂SO₄ were investigated using weight loss method, electrochemical measurements and scanning electron microscope (SEM). The results revealed that HCE was an effective mixed-type inhibitor with a predominantly cathodic action for mild steel in 0.5 M H₂SO₄ solution, its inhibition efficiency increases with the increase of the concentration of HCE, and when the concentration of HCE reaches 0.75 g/L, the inhibition efficiency is up to 90 % at 298 K. The adsorption of HCE on steel surface obeyed Langmuir adsorption isotherm, thus the thermodynamic and kinetic parameters were calculated and discussed.

Keywords: Houttuynia cordata; Mild steel; H₂SO₄; Corrosion inhibitor; Adsorption.

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