

1,2,3-Benzotriazole as corrosion inhibitor for Mild Steel in 0.1 N Sulphuric Acid medium

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ABSTRACT

The corrosion inhibition efficiency of 1,2,3-benzotriazole for mild steel in 0.1 N sulphuric acid medium at different concentrations was investigated at 303.0 K temperatures using weight loss, electrochemical polarization and electrochemical impedance spectroscopy techniques. The surface study was carried out using Metallurgical Research Microscopy technique. The corrosion rate and percentage corrosion inhibition efficiency was calculated with and without the corrosion inhibitor. Corrosion rate increases with increase in concentration of the corrosion inhibitor. Maximum PCIE was observed at 1000 ppm concentration of inhibitor. Overall study confirmed that 1,2,3-benzotriazole acts as a very good corrosion inhibitor for mild steel in 0.1 N H₂SO₄ solution as a corroding medium.

Keywords : Corrosion, 1,2,3-benzotriazole, Sulphuric acid, Mild Steel, electrochemical polarization, weight loss.