

## STUDY OF 3-ANILINOMETHYLPROPIONATE ON MILD STEEL SURFACE CORROSION IN SULPHURIC ACID SOLUTION

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**Abstract.** Organic compounds with biological properties such as 3-anilinomethylpropionate have been utilized in this study for assessing corrosion inhibition performance on mild steel within 0.5M sulfuric acid solution. In this experiment, weight loss, polarization resistance, Tafel polarization, and electrochemical impedance spectroscopy methods were used to assess the performance of the corrosion inhibitors and the mechanisms involved. In this regard, 3-anilinomethylpropionate is classified as mixed type corrosion inhibitor with a performance level of 96.5% at a concentration of 70 ppm. According to the impedance study, the higher the concentration of inhibitors the greater the charge transfer resistance whereas the lower the double layer capacitance. In summary, this paper presents the use of 3-anilinomethylpropionate for corrosion inhibition on mild steel surface within 0.5M sulfuric acid solution. In order to analyze the performance of the corrosion inhibitors as well as the mechanism involved, weight loss, polarization resistance, Tafel polarization, and impedance spectroscopy methods were used. As indicated by potentiodynamic polarization, 3-anilinomethylpropionate acts as mixed type corrosion inhibitor with a performance level of 96.5% at a concentration of 70 ppm.

**Keywords:** aniline, ester, potentiodynamic polarization, EIS, mixed type inhibitor.