



The inhibition effects of methionine on mild steel in acidic media

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Abstract The corrosion of metal surfaces causes huge financial damages to the industries annually, what has lead to an increase in the search for substances that can slow down or prevent corrosion rate. Green inhibitors which are biodegradable, without any heavy metals and other toxic compounds, are promoted. Amino acids are attractive as corrosion inhibitors because they are nontoxic. We have used methionine as corrosion inhibitor. Materials under investigation are two kind of low allow carbon steel marked as: Steel 39, Steel 44 usually applied to concrete as reinforcing bars, and manufacture in Elbasan. The inhibition effect of methionine on the corrosion behavior of low allow steel is investigated in sulfuric acid in presence of chloride ions, in form of NaCl (H_2SO_4 1M + Cl^- 10^{-3}M). Potentiodynamic polarization method is used for inhibitor efficiency testing. The pitting corrosion current shows that increasing concentration of the inhibitor causes a decrease in pitting current density, and inhibition efficiency increases with increasing concentration of the inhibitors.

Keywords: amino acid, methionine, potentiodynamic polarization.
