Inhibition Efficiency of Some Amino Acids in the Presence of Vanillin for the Corrosion of Mild Steel in HCl Solution

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The inhibition of corrosion of mild steel in HCl in the presence of vanillin (van) coexisting with some amino acids, *i.e.*, valine (val), cysteine (cys), methycysteine hydrochloride (m-cys) and methionine (meth) are compared. The possible synergistic inhibition of the corrosion by these amino acids using vanillin are also examined. It has been found that the inhibition efficiency of the studied amino acids in HCl is arranged as follows; meth < m-cys < cys < val. In the presence of vanillin, the inhibition efficiencies are arranged as follows; m-cys < val < meth < cys. This arrangement of the inhibition efficiency is explained based on the possible synergistic adsorption of the studied amino acids with the pre-adsorbed chloride ions.

Keywords: Adsorption, Eco-friendly corrosion inhibitor, Synergism, Adsorption, Amino acids

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