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CORROSION INHIBITION IN SALINE ENVIRONMENT USING KETONIC MANNICH BASE FROM *ortho*-HYDROXYACETOPHENONE

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Abstract

The paper presents the results obtained when using one ketonic Mannich base BM (1-(2'-hydroxyphenyl)-3-(1-piperidinylamino)propan-1-one hydrochloride) as corrosion inhibitor in saline environment, for different types of carbon steels, with various alloying elements. The Mannich base was synthesized and used in corrosion experiments, in concentrations varying from 0....1300 ppm. The corrosion experiments were performed by potentiodynamic polarization studies, with 50 mVs⁻¹ scan rate. The corrosion rate and inhibition efficiency were calculated from corrosion current density, determined from polarization curves. Based on the experimental data, the interactions between the steel and the organic inhibitor were discussed. It was proved that adsorption process occurs in all cases and the mechanism strongly depends on the alloying elements. It could be estimated that the inhibitor's adsorption is due to the interaction with the aromatic ring and with the ionic head.

Key words: corrosion inhibitors, corrosion sintered steel, Mannich bases

Received: April, 2011; *Revised final:* September, 2011; *Accepted:* September, 2011

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