

Evaluation of inhibitive action of sodium benzoate on corrosion behaviour of AA6063 in seawater

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Abstrak

Corrosion is a fundamental process which plays an important role in economics and safety.

Apparently, corrosion cannot be avoided, but its severity can be prevented. Inhibitors have always been considered to be the first line of defense against corrosion. Several corrosion inhibitors are available today. The objective of this study was to evaluate the effectiveness of sodium benzoate as an inhibitor to slow down or prevent corrosion. This project involves the use of gravimetric measurements, potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) to evaluate inhibitive action of sodium benzoate on corrosion behavior of AA6063 aluminium alloy in seawater. The electrochemical measurements showed that the presence of sodium benzoate as an inhibitor significantly decrease the weight loss, corrosion current densities (i_{corr}), corrosion rates and double layer capacitance (C_d), whilst increasing the polarization resistance (R_p).