

STUDY OF THE ELECTROCHEMICAL BEHAVIOR AND SURFACE INTERACTION OF AA6063 TYPE AL-MG-SI ALLOY BY SODIUM MOLYBDATE IN SIMULATED SEA WATER ENVIRONMENT

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ABSTRACT

The potential of sodium molybdate on the corrosion of aluminium alloy AA6063 type was examined with the view to study the electrochemical and surface degradation for metal-inhibitor interface using gravimetric and electrochemical corrosion techniques in simulated seawater environment. The microstructures of as-corroded samples were also assessed for their surface morphology. The results show that corrosion rate decreased with an increase in the inhibitor concentration and exposure time. Equally, the inhibition efficiency increased with inhibitor addition with maximum efficiency obtained at 5g/v sodium molybdate addition. The adsorption of the molecules of the extract on the aluminium alloy surface obeyed the Langmuir adsorption isotherm. The potentiodynamic polarization results showed that sodium molybdate acted as mixed-type inhibitor.

KEYWORDS: Adsorption, Surface Interaction, Sodium Molybdate, Corrosion Rate