



**Inhibitive effect of N,N'-bis(Salicylidene)-1,2-Diaminoethane and N,N'-bis(3-Methoxy Salicylidene)-1,2-Diaminoethane on the corrosion of AA6061 alloy in Hydrochloric acid**

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**ABSTRACT**

*The inhibitive effect of Schiff base compounds namely N, N'-bis (Salicylidene)-1, 2-Diaminoethane (Salen) and N, N'-bis (3-Methoxy Salicylidene)-1, 2 Diaminoethane (Msalen) on the corrosion of aluminium alloy AA6061 in presence of 1M Hydrochloric Acid was investigated using by Potentiodynamic polarization(PDP), electrochemical impedance spectroscopy(EIS) and weight loss method. The Potentiodynamic polarization study indicated that the two Schiff bases acted as mixed type inhibitors. The change in EIS parameters is indicative of adsorption of Schiff bases on aluminum alloy surface leading to the formation of protective layer. The weight loss study showed that the inhibition efficiency of these compounds increases with increase in concentration and vary with solution temperature and immersion time. The thermodynamic parameters were calculated to investigate the mechanism of corrosion inhibition. The effect of methoxy group on corrosion efficiency was observed from the results obtained between Salen and Msalen. The effectiveness of these inhibitors were in the order of Msalen>Salen. The adsorption of Schiff bases on AA6061 alloy surface in acid obeyed Langmuir adsorption isotherm. The surface characteristics of inhibited and uninhibited alloy samples were investigated by scanning electron microscopy (SEM) and atomic force microscopy (AFM).*

**Keywords:** Aluminum alloy, Corrosion inhibitors, Schiff base, Electrochemical techniques, Adsorption isotherms.

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