

AQUEOUS CORROSION INHIBITION STUDIES OF ALUMINUM 2024, 6061, AND 7075 ALLOYS BY OXYANION ESTERS OF α -HYDROXY ACIDS AND THEIR SALTS

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ABSTRACT

In this investigation, corrosion inhibition of certain aluminum alloys in aqueous solutions has been tested primarily via weight-loss tests for their direct corrosion inhibition efficiencies and also for their conversion coating formation abilities. Effects of variables such as inhibitor concentrations, immersion periods, and cationic constituents on the individual and synergistic inhibition efficiencies as well as on their conversion coating formation capacities have been studied. Inhibition efficiency data were recorded using statistics. Some of the studied inhibitors were noted for their very high inhibition efficiencies and a few for their unusual conversion coating formation capabilities. Using the data available in literature and the experimental data obtained in this study, aqueous corrosion inhibition mechanisms of aluminum alloys by oxyanion esters of α -hydroxy acids and their salts are suggested.

KEYWORDS: Conversion Coating, Immersion, Inhibition Efficiency, Substrate, Weight-Loss