ABSTRACT

SYNTHESIS, CHARACTERIZATION, AND ANTICORROSION ACTIVITY TEST OF SOME ORGANOTIN(IV) 3-AMINOBENZOATE COMPOUNDS ON MILD STEEL IN THE CORROSIVE MEDIUM

By

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In this research, the syntheses of diphenyltin(IV) di-3-aminobenzoate as a yellowish-white solid with percentage yield 95.2 %, and triphenyltin(IV) 3-aminobenzoate as reddish-brown solid with percentage yield of 80.85 % were performed. The compounds were mainly characterized by UV, IR, 1H, 13C NMR spectroscopies and based on the microanalytical data that lead to the structure of diphenyltin(IV) di-3-aminobenzoate and triphenyltin(IV) 3-aminobenzoate. The anti-corrosion test with potentiodynamic method indicated that the triphenyltin(IV) 3-aminobenzoate compound has shown to inhibit corrosion better than that of diphenyltin analogues, with percentage inhibition of 50.34 % and 42.88 %, respectively, and with corrosion rate of 6.71 and 7.72 mpy respectively, in the concentration of 100 mg/L. The organotin(IV) aminobenzoates tend to behave predominantly as cathodic inhibitor. The qualitative analysis of mild steel surface using microscope showed that in the presence of diphenyl- and triphenyltin(IV) 3-aminobenzoate was able to inhibit the corrosion rate on steel surface.

Keywords: organotin(IV) aminobenzoate, corrosion, potentiostat.