

LIST OF TABLES

Tables	Page
Table (1.1): Isotherm Equations	10
Table (2.1): Composition of material samples	40
Table (3.1): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of organic additives after 90 min immersion at 30°C.	54
Table (3.2): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives after 90 min immersion at 35°C.	61
Table (3.3): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives after 90 min immersion at 40°C.	65
Table (3.4): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives after 90 min immersion at 45°C.	69
Table (3.5): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives after 90 min immersion at 50°C.	73
Table (3.6): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives after 90 min immersion at 55°C.	77
Table (3.7): Activation parameters for the dissolution of zinc in presence and absence of different concentrations of inhibitors in 0.5 M HCl.	84
Table. (3.8): Inhibitor binding constant(K), Free energy of binding ΔG_{ads} , number of active sites($1/y$) and later interaction parameter (a) for organic additives at 30°C.	91
Table. (3.9): Thermodynamic parameters for the adsorption of organic additives in 0.5 M HCl on zinc surface.	92
Table (3.10): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives with addition of 1×10^{-2} M KI after 90 min immersion at 30°C.	98
Table (3.11): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives with addition of 1×10^{-2} M KSCN after 90 min immersion at 30°C.	102

Table (3.12): Data from weight loss of zinc dissolution in 0.5 M HCl at different concentrations of the organic additives with addition of 1×10^{-2} M KBr after 90 min immersion at 30°C.	106
Table.(3.13): Synergism parameter (S_{θ}) for different concentrations of the organic additives with addition of 1×10^{-2} M KI.	110
Table. (3.14): Synergism parameter (S_{θ}) for different concentrations of the organic additives with addition of 1×10^{-2} M KSCN.	111
Table.(3.15): Synergism parameter (S_{θ}) for different concentrations of the organic additives with addition of 1×10^{-2} M KBr.	112
Table (3.16): The effect of concentration of compound (I) on the free corrosion potential (E_{corr}), corrosion current density (I_{corr}), Tafel slopes (β_a & β_c), inhibition efficiency (% IE) ,degree of surface coverage (θ) and corrosion rate for the corrosion of zinc in 0.5M HCl at 25°C.	119
Table (3.17): The effect of concentration of compound (II) on the free corrosion potential (E_{corr}), corrosion current density (I_{corr}), Tafel slopes (β_a & β_c), inhibition efficiency (% IE) ,degree of surface coverage (θ) and corrosion rate for the corrosion of zinc in 0.5M HCl at 25°C.	120
Table (3. 18): The effect of concentration of compound (III) on the free corrosion potential (E_{corr}), corrosion current density (I_{corr}), Tafel slopes (β_a & β_c), inhibition efficiency (% IE) ,degree of surface coverage (θ) and corrosion rate for the corrosion of zinc in 0.5M HCl at 25°C.	121
Table (3.19): Electrochemical kinetic parameter obtained by EIS technique for the corrosion of zinc in 0.5M HCl at different concentrations of compound (I) at 25°C.	127
Table (3.20): Electrochemical kinetic parameter obtained by EIS technique for the corrosion of zinc in 0.5M HCl at different concentrations of compound (II) at 25°C.	128
Table (3.21): Electrochemical kinetic parameter obtained by EIS technique for the corrosion of zinc in 0.5M HCl at different concentrations of compound (III) at 25°C.	129