

Table (3.15): The effect of concentration of compound (1) on the free corrosion potential (E_{corr}), corrosion current density (j_{corr}), Tafel slopes (β_a & β_c), degree of surface coverage (θ) and inhibition efficiency (% IE) for the corrosion of C- steel in 1 M HCl at 30 °C.

Concentration M	$-E_{\text{corr}}$, mV	j_{corr} $\mu\text{A cm}^{-2}$	$-\beta_c$, mV dec^{-1}	β_a , mV dec^{-1}	θ	% IE
0	524	410	296	100	-----	-----
1×10^{-4}	502	223	209	197	0.456	45.6
3×10^{-4}	499	103	248	200	0.628	62.8
5×10^{-4}	490	100	238	208	0.743	74.3
7×10^{-4}	488	72	227	218	0.825	82.5
9×10^{-4}	486	53	220	220	0.871	87.1
11×10^{-4}	480	42	223	222	0.897	89.7

Table (3.16): The effect of concentration of compound (2) on the free corrosion potential (E_{corr}), corrosion current density (j_{corr}), Tafel slopes (β_a & β_c), degree of surface coverage (θ) and inhibition efficiency (% IE) for the corrosion of C- steel in 1 M HCl at 30 °C.

Concentration M	$-E_{\text{corr}}$, mV	j_{corr} $\mu\text{A cm}^{-2}$	$-\beta_c$, mV dec^{-1}	β_a , mV dec^{-1}	θ	% IE
0	524	410	296	100	-----	-----
1×10^{-4}	524	235	283	181	0.427	42.7
3×10^{-4}	523	182	260	170	0.507	50.7
5×10^{-4}	522	110	240	213	0.732	73.2
7×10^{-4}	521	81	241	222	0.803	80.3
9×10^{-4}	520	64	238	228	0.840	84.0
11×10^{-4}	520	50	230	232	0.879	87.9

Table (3.17): The effect of concentration of compound (3) on the free corrosion potential (E_{corr}), corrosion current density (j_{corr}), Tafel slopes (β_a & β_c), degree of surface coverage (θ) and inhibition efficiency (% IE) for the corrosion of C- steel in 1 M HCl at 30 °C.

Concentration M	$-E_{\text{corr}}$, mV	j_{corr} $\mu\text{A cm}^{-2}$	$-\beta_c$, mV dec^{-1}	β_a , mV dec^{-1}	θ	% IE
0	524	410	296	100	-----	-----
1×10^{-4}	494	267	270	172	0.300	30.0
3×10^{-4}	491	208	236	177	0.492	49.2
5×10^{-4}	486	128	227	184	0.688	68.8
7×10^{-4}	484	96	218	190	0.760	76.0
9×10^{-4}	481	70	216	202	0.829	82.9
11×10^{-4}	474	53	211	207	0.870	87.0

Table (3.18): The effect of concentration of compound (4) on the free corrosion potential (E_{corr}), corrosion current density (j_{corr}), Tafel slopes (β_a & β_c), degree of surface coverage (θ) and inhibition efficiency (% IE) for the corrosion of C- steel in 1 M HCl at 30 °C.

Concentration M	$-E_{\text{corr}}$, mV	j_{corr} $\mu\text{A cm}^{-2}$	$-\beta_c$, mV dec^{-1}	β_a , mV dec^{-1}	θ	% IE
0	524	410	296	100	-----	-----
1×10^{-4}	523	293	203	108	0.280	28.0
3×10^{-4}	522	231	202	161	0.436	43.6
5×10^{-4}	520	143	200	163	0.602	60.2
7×10^{-4}	520	124	189	167	0.698	69.8
9×10^{-4}	518	78	186	170	0.810	81.0
11×10^{-4}	517	56	184	179	0.863	86.3