

Supplementary materials (figures)

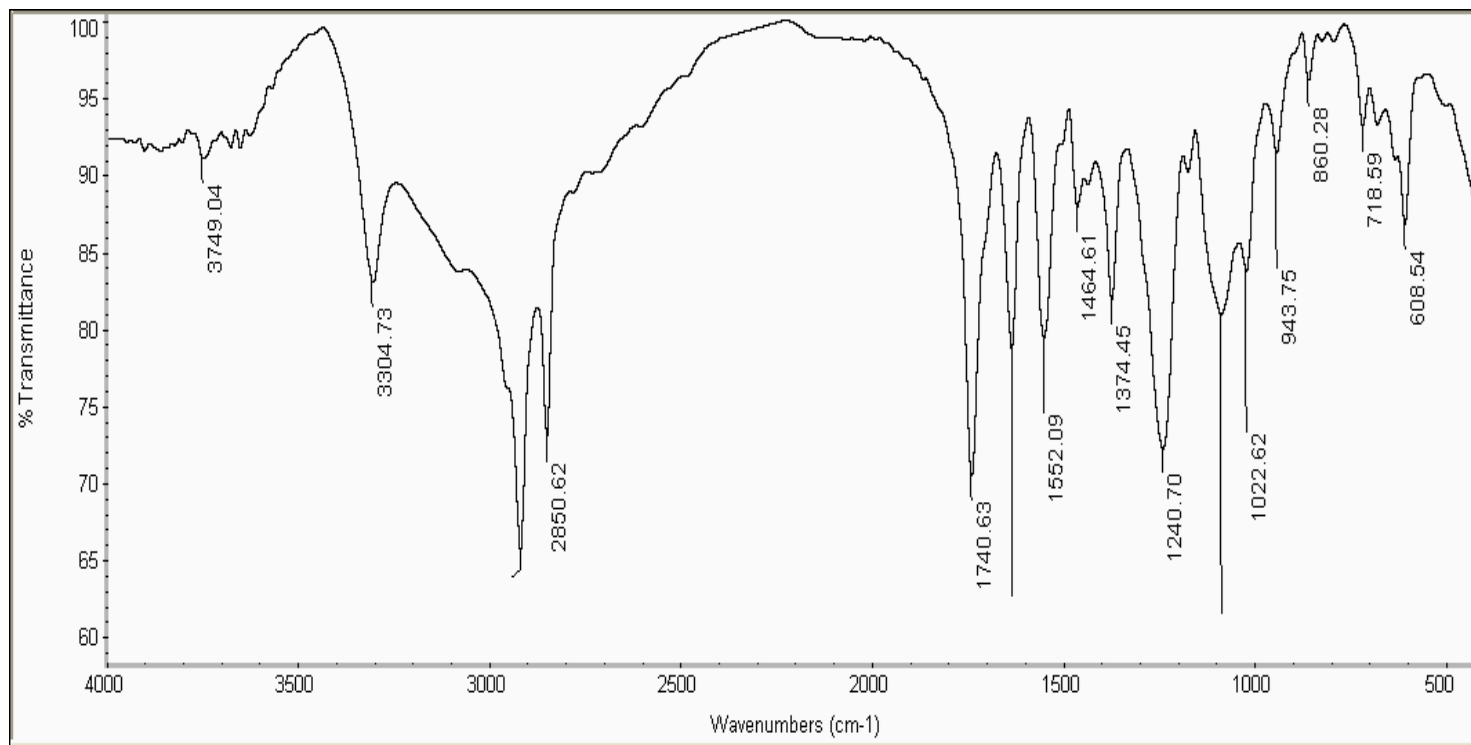


Figure (S1): IR Spectra **(PETPG-OL) ester derivative**

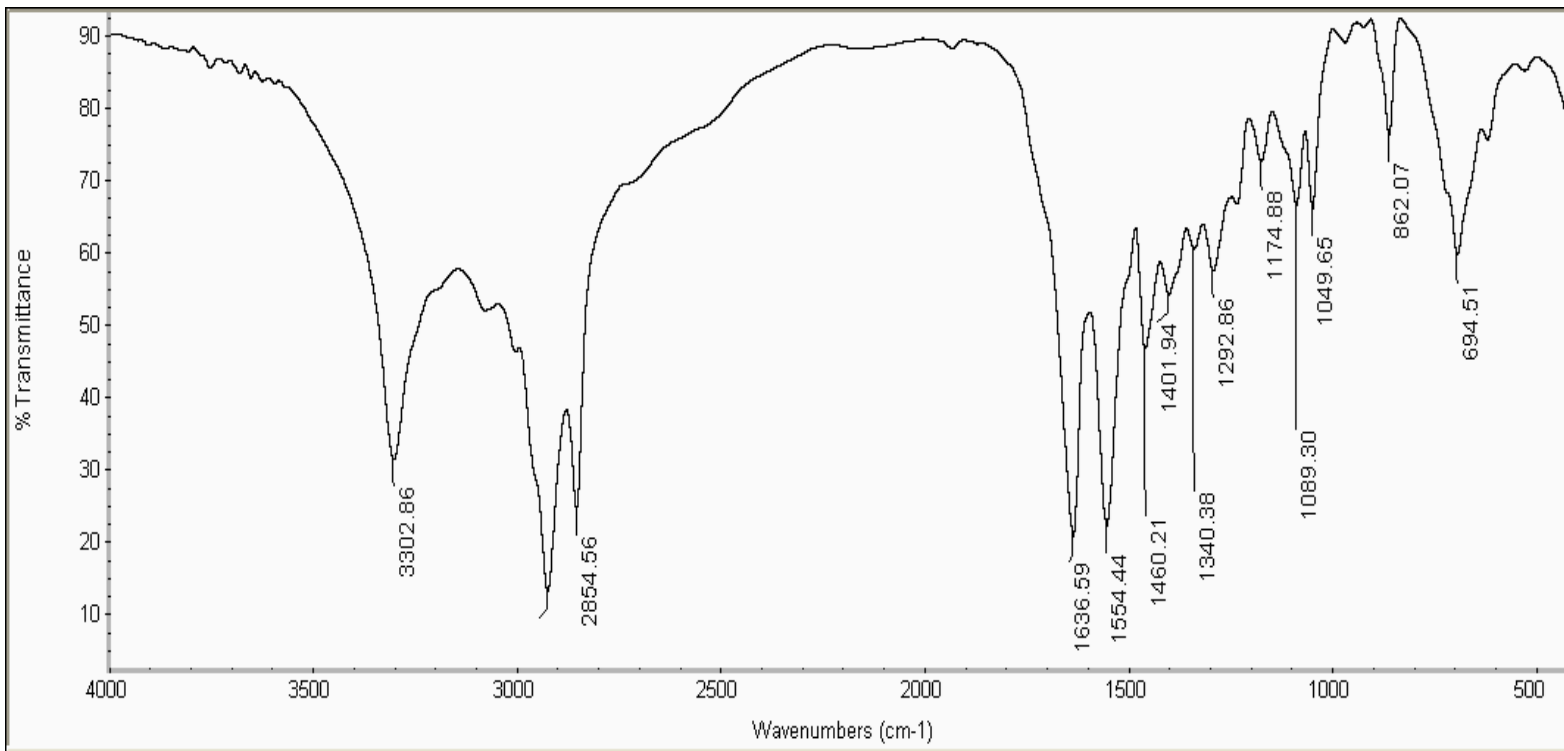


Figure (S2): IR Spectra of (PETAA-OL) amide derivative

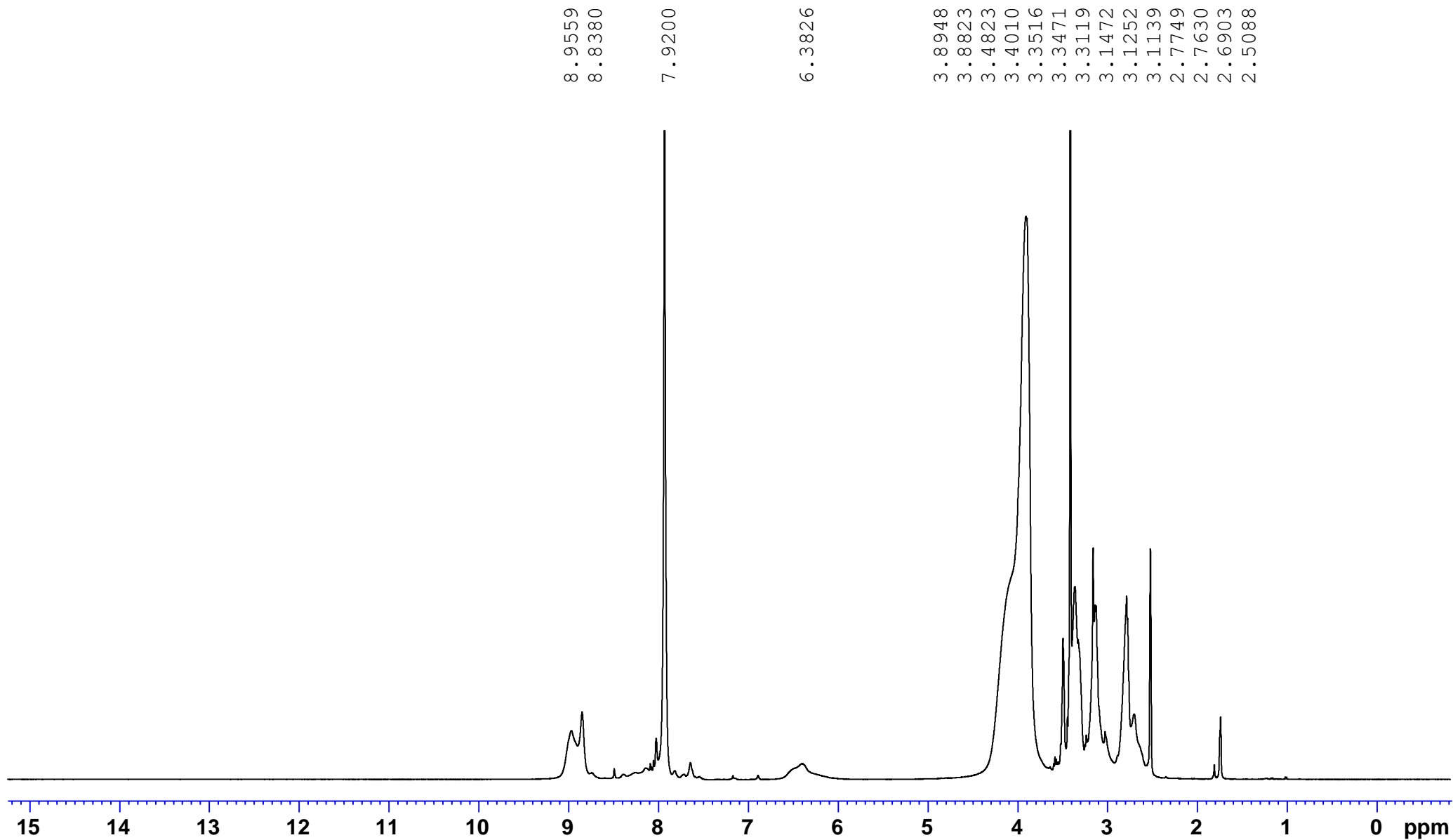


Figure (S3): ¹H NMR analysis of (PETAA-OL) amide derivative

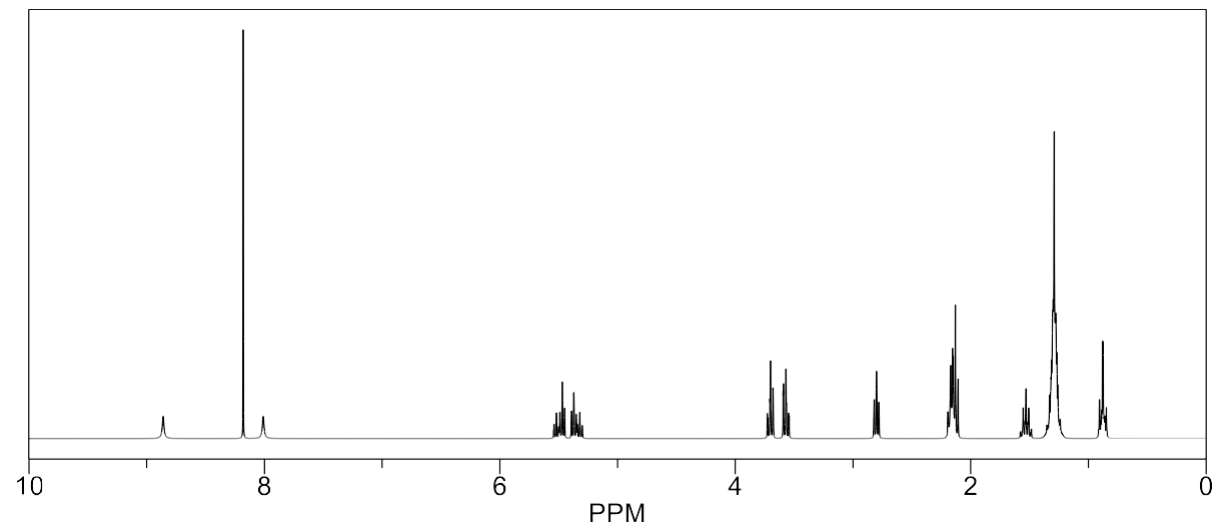


Figure (S 4): ^1H NMR analysis of (PETPG-OL) ester derivative

(Table S1) Effect of inhibitors concentration on steel corrosion characteristics in 3.5 % NaCl solutions determined by weight loss measurements at 303 k.

Kind of surfactants inhibitors	Glycol based polymer				Amide based polymers			
	PETPG		PETPG-OL		PETAA		PETAA-OL	
	I.E. %	θ	I.E. %	θ	I.E. %	θ	I.E. %	θ
Blank	-	-	-	-	-	-	-	-
50	81.9	0.819	83.5	0.835	85.3	0.853	87.6	0.876
100	82.3	0.823	84.5	0.845	87.4	0.874	89.8	0.898
150	83.4	0.834	85.3	0.853	89.6	0.896	91.2	0.912
200	84.5	0.845	86.2	0.862	90.7	0.907	92.3	0.923