

## **APPENDIX E**

Data for Plots in Chapter 3 of P20G100 and P20G100C12 Adsorption Isotherms versus Equilibrium Concentration and pH. Note data at added concentration of approximately  $3 \times 10^{-3}$  is average of 3 or more data points.

Substrate: SiO<sub>2</sub> Lot # 1E102

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI20G100C12	4.977E-03	3.483E-03	0.9328	9.68	9.15
PEI20G100C12	2.997E-03	1.670E-03	0.7773		
PEI20G100C12	1.500E-03	8.468E-04	0.7475	8.23	
PEI20G100C12	7.501E-04	2.630E-04	0.5746	7.08	
PEI20G100	4.480E-03	3.371E-03	0.6211	9.14	8.77
PEI20G100	2.995E-03	2.074E-03	0.5430		
PEI20G100	1.499E-03	1.102E-03	0.4689	8.44	
PEI20G100	7.498E-04	4.101E-04	0.4105	7.25	

Substrate: TiO<sub>2</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI20G100C12	4.977E-03	3.399E-03	0.5513	8.65	8.50
PEI20G100C12	3.000E-03	2.040E-03	0.2970	7.91	
PEI20G100C12	1.500E-03	8.282E-04	0.2317	6.62	
PEI20G100C12	7.501E-04	3.734E-04	0.1323	5.68	
PEI20G100	4.480E-03	3.270E-03	0.4149	8.11	8.06
PEI20G100	3.006E-03	1.670E-03	0.3100	7.59	
PEI20G100	1.499E-03	9.162E-04	0.1967	6.35	
PEI20G100	7.498E-04	4.508E-04	0.1033	5.31	

Substrate : Al<sub>2</sub>O<sub>3</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI20G100C12	4.498E-03	4.814E-03	-0.0690	9.19	8.94
PEI20G100C12	2.999E-03	1.997E-03	0.2138		
PEI20G100C12	1.500E-03	9.601E-04	0.1194		
PEI20G100C12	7.501E-04	5.953E-04	0.0341		
PEI20G100	4.480E-03	4.480E-03	0.0000	8.61	8.45
PEI20G100	3.006E-03	2.610E-03	0.0903		

Data for Linear hydroxyl Modified PEI Plots in Chapters 3 & 5. Note that points at added concentration of approximately  $3.00 \times 10^{-3}$  g Polymer/g solution are an average of 2 or 3 actual data points. Does not contain P100G100 pH study on SiO<sub>2</sub> or Al<sub>2</sub>O<sub>3</sub> data.

Substrate: SiO<sub>2</sub> Lot 1E102

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI100G100	4.600E-03	3.764E-03	0.5300	9.02	8.72
PEI100G100	3.000E-03	2.233E-03	0.6210		
PEI100G100	1.502E-03	8.849E-04	0.4912	8.20- 8.81	
PEI100G100	7.508E-04	1.759E-04	0.2791	7.02	
PEI50G100	4.564E-03	3.951E-03	0.3794	9.15	8.77
PEI50G100	3.014E-03	2.278E-03	0.5999		
PEI50G100	1.503E-03	8.583E-04	0.5101		
PEI50G100	7.515E-04	1.582E-04	0.2902	7.10	

Substrate: TiO<sub>2</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI100G100	5.004E-03	3.429E-03	0.5460	8.05	7.92
PEI100G100	4.498E-03	2.983E-03	0.5289	7.94	7.81
PEI100G100	3.000E-03	1.710E-03	0.4297		
PEI100G100	1.500E-03	7.393E-04	0.2658	6.18	6.27
PEI100G100	7.508E-04	7.143E-04	0.0128		
PEI50G100	4.970E-03	1.983E-03	1.0689	8.32	8.18
PEI50G100	3.014E-03	1.852E-03	0.4015		
PEI50G100	1.503E-03	9.411E-04	0.1960		
PEI50G100	7.515E-04	7.262E-04	0.0088		

Substrate: Al<sub>2</sub>O<sub>3</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b><math>\Gamma</math> (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PEI100G100	2.999E-03	2.068E-03	0.2046	8.26- 8.85	
PEI100G100	1.500E-03	8.267E-04	0.1490	7.90	7.56
PEI100G100	1.502E-03	1.196E-03	0.0671		
PEI100G100	7.793E-04	8.656E-04	-0.0190	7.50	7.42
PEI50G100	2.994E-03	2.253E-03	0.1632		
PEI50G100	1.503E-03	1.121E-03	0.0841		
PEI50G100	7.680E-04	3.250E-04	0.1410	5.3-5.7	

Data for Plots in Chapter 5 of PA32G100 and PA16G100 Adsorption Isotherms versus Equilibrium Concentration and pH. Note data at added concentration of approximately  $3 \times 10^{-3}$  is average of 3 or more data points. Does Not Contain PA32G100 pH study on SiO<sub>2</sub>.

Substrate: SiO<sub>2</sub> Lot # 1E102

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b>Γ (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PA32G100	5.001E-03	2.927E-03	1.0120	9.70	
PA32G100	2.999E-03	1.540E-03	1.1537		
PA32G100	1.500E-03	3.192E-04	0.9415	8.83-	
				9.3	
PA32G100	7.480E-04	1.353E-04	0.2952	6.90	
PA16G100	3.995E-03	2.536E-03	0.6906	9.68	
PA16G100	3.002E-03	1.970E-03	0.8109		
PA16G100	1.500E-03	6.126E-04	0.6982		
PA16G100	7.479E-04	1.174E-04	0.2971	7.11	

Substrate: TiO<sub>2</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b>Γ (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PA32G100	4.998E-03	2.160E-03	0.9844	8.50	8.47
PA32G100	2.999E-03	1.334E-03	0.5760		
PA32G100	1.500E-03	4.468E-04	0.3674	6.62	6.77
PA32G100	6.666E-04	2.775E-04	0.1346	5.52	5.83
PA16G100	4.530E-03	3.346E-03	0.4131	9.12	8.90
PA16G100	3.002E-03	1.580E-03	0.4840		
PA16G100	1.500E-03	1.045E-03	0.1630		
PA16G100	7.479E-04	2.916E-04	0.1595		

Substrate: Al<sub>2</sub>O<sub>3</sub>

<b>Polymer</b>	<b>Added Concentration (g Polymer/g solution)</b>	<b>Equilibrium Concentration (g Polymer/g solution)</b>	<b>Γ (mg/m<sup>2</sup>)</b>	<b>pH<sub>o</sub></b>	<b>pH<sub>f</sub></b>
PA32G100	5.001E-03	3.038E-03	0.4294	9.64	9.35
PA32G100	4.998E-03	4.607E-03	0.0863	9.00	8.91
PA32G100	2.999E-03	2.199E-03	0.1762	9.22	8.82
PA32G100	1.500E-03	4.521E-04	0.2329		
PA32G100	7.790E-04	3.417E-04	0.1411	5.3-	
				5.7	
PA16G100	4.530E-03	4.075E-03	0.0999	9.40	9.33
PA16G100	3.995E-03	4.772E-03	-0.1715	9.10	8.82
PA16G100	3.002E-03	2.416E-03	0.1291	9.23	8.99
PA16G100	1.500E-03	9.819E-04	0.1145		
PA16G100		3.521E-04	0.0988		