Team 6, exp. 9

PFR data collected with water heater at requested temperature. Samples of 10 mL were taken after conductivity plateaued, quenched with 10 mL of 0.1 M HCl as soon as possible, and titrated with noted amount of 0.1 M NaOH, using phenolphthalein as an indicator. Reactor dimensions included in email.

Effect of temperature:

Temperature set point (C)	Effluent temperature (C)	Volume of titrant (mL)
25	24.9	6.3
25	24.8	6.4
25	24.9	6.2
35	35.0	6.9
35	34.8	7.1
35	34.9	7.3
45	44.8	7.5
45	44.8	7.6
45	45.0	7.3
55	54.7	9.0
55	54.8	8.5
55	54.9	8.6

A batch, stirred beaker at room temperature was filled with 250 mL each of 0.1 M NaOH and 0.1 M EtAc. Each minute, a 10 mL sample was pipetted into a beaker already containing 10 mL of 0.1 M HCl. The required amounts of 0.1 M NaOH to titrate these samples are given below.

Time (min)	Volume of titrant (mL)
1	5.1
2	5.3
3	5.6
4	5.9
5	5.8
6	5.9
7	6.2
8	6.4
9	6.8
10	6.8
11	7.0
12	7.1
13	7.3
14	7.5
15	7.6
16	7.5
17	7.6
18	7.7
19	7.9
20	8.1
21	8.2
22	8.5
23	8.3
24	8.2
25	8.7
26	8.6
27	8.6
28	8.7
29	8.8
30	9.0