Team 19, exp. 1

Experiment A

45 mL DI water contacted with 45 mL kerosene with variable initial concentration of acetic acid (AA). A 5 mL sample of aqueous phase was taken and titrated with 1.0 M NaOH. Volumes needed to neutralize listed below:

Concentration of AA [M]	0	0.1	0.17	0.25	0.32	0.4	0.5
Volume added of 1.0 M NaOH (mL)	One drop	2.7	4.8	9.3	12.0	15.2	18.1

Experiment B

Contactors had following information listed on its face: max throughput 1.9 LPM, max P 22 psig, T 0-120 ^{o}C, volume 0.2 L, weight 32 pounds, material 316L SS.

Pump calibration, volume expelled in one minute is recorded for the settings below:

Pump speed (%)	10	20	30	40	50	60
Volume (mL)	300	650	800	1150	1450	1700

Contacting 0.1 M AA in kerosene with DI water at specified flow rate and 3,500 RPM. Streams never demonstrated mixing of phases so long as rotor was turned on prior to pumps. Aqueous exit stream sample of 5 mL was titrated with 0.1 M NaOH, volume required to neutralize given below.

Trial	1	2	3	4	5	6
Pump speed (%)	10	20	30	40	50	60
Volume of 0.1 M NaOH (mL)	8.5	8.2	3.6	3.0	2.8	2.7
Replicate Volume of 0.1 M NaOH (mL)	8.3	8.0	4.0	3.2	2.7	2.5

Experiment C

Contacting 0.1 M AA in kerosene with DI water at 30% flow rate and specified RPM. Aqueous exit stream sample of 5 mL was titrated with 0.1 M NaOH, volume required to neutralize given below.

Trial	1	2	3	4	5	6
RPM	3500	3000	2500	2000	1500	1000
Volume of 0.1 M NaOH (mL)	3.7	3.6	3.8	3.2	2.9	2.7