

Team 13, Exp. 1

The amount of water expelled in one minute was recorded below for both pumps #1 and #2, #1 with water and #2 with kerosene:

Pump speed [%]	20	30	40	50	60	70	80	90	100
Pump 1 water collected [mL]	535	783	1068	1250	1590	1890	2130	2270	2560
Pump 2 water collected [mL]	512	807	1050	1310	1600	1880	2040	2360	2620

Different concentrations of acetic acid in water, with a constant 0.01 M nitric acid, (prepared as detailed in procedure) was contacted with kerosene, 35 mL of each phase. A 5 mL sample of aqueous phase was titrated with 0.1 M NaOH. Amount required for titration provided below:

Conc. AA [M]	0	0.2	0.4	0.6	0.8	1
Volume 0.1 M NaOH added [mL]	0.4	9.3	18.1	26.0	34.6	45.4

Effect of flow rate on contactor was explored contacted 30% TBP in kerosene with 0.2 M acetic acid and 0.01 M nitric acid in water. Stirring rate was held at 4,000 RPM. A five milliliter sample of the raffinate was obtained and titrated with 0.1 M NaOH.

Pump Speeds [%]	30	40	50	60	70	80
Volume of 0.1 M NaOH added [mL]	0.3	1.4	2.0	2.3	3.8	3.9

Effect of rotor speed was determined with both pumps at a fixed 40% speed. Feed solutions were identical to previous trials. Amount of 0.1 M NaOH required to neutralize a five milliliter sample of raffinate is provided below.

RPM	6000	5500	5000	4500	4000	3500	3000
Volume of 0.1 M NaOH added [mL]	1.7	1.9	2.0	1.5	1.4	1.3	1.4