

## Kinetics of Ethyl Acetate Saponification

**Student Name:**

**Partner Name:**

Date	Instructor Initials	Grade

### Part A

Exact Sodium Hydroxide Concentration =

Water Bath Temperature =

Trial 1	Trial 2	Trial 3
Volume Ethyl Acetate	Volume Ethyl Acetate	Volume Ethyl Acetate

Show your calculations for the volume of ethyl acetate in trial 1.

Initial Conductivity ( $\kappa_0$ )	Initial Conductivity ( $\kappa_0$ )	Initial Conductivity ( $\kappa_0$ )

Record the conductivity of your solution over time until you reach a stable final value. Export your data to a usb drive. Prepare a plot of  $(\kappa_0 - \kappa_t)/(\kappa_t - \kappa_\infty)$  vs. t. Fit a line to the data and note the slope. Upload your spreadsheet file to Canvas.

Final Conductivity ( $\kappa_\infty$ )	Final Conductivity ( $\kappa_\infty$ )	Final Conductivity ( $\kappa_\infty$ )
Slope	Slope	Slope
Rate Constant ( $k$ )	Rate Constant ( $k$ )	Rate Constant ( $k$ )

Show how you calculated the rate constant for trial 1. Report an average.

<b>Part B</b>		
Water Bath Temperature	Water Bath Temperature	Water Bath Temperature
Trial	Trial	Trial
Volume Ethyl Acetate	Volume Ethyl Acetate	Volume Ethyl Acetate
Show your calculations for the volume of ethyl acetate in the 30 °C trial.		
Initial Conductivity ( $\kappa_0$ )	Initial Conductivity ( $\kappa_0$ )	Initial Conductivity ( $\kappa_0$ )
Record the conductivity of your solution over time until you reach a stable final value. Export your data to a usb drive. Prepare a plot of $(\kappa_0 - \kappa_t)/(\kappa_t - \kappa_\infty)$ vs. t. Fit a line to the data and note the slope. Upload your spreadsheet file to Canvas.		
Final Conductivity ( $\kappa_\infty$ )	Final Conductivity ( $\kappa_\infty$ )	Final Conductivity ( $\kappa_\infty$ )
Slope	Slope	Slope
Rate Constant ( $k$ )	Rate Constant ( $k$ )	Rate Constant ( $k$ )