

# Ochem lab report distillation assignment



**ASSIGN  
BUSTER**

Distillation Objective: To illustrate the use of distillation for separating a mixture of two volatile liquids with different boiling points. Background: Distillation consists of heating a liquid until it vaporizes, and then condensing the vapor and collecting it in a separate container. Distillation is used to separate mixtures of liquids that either have different boiling points, or that have one component that does not distill. There are many types of distillation, each of which has a distinct purpose.

Steam distillation is used to solute volatile substances that have high boiling points. When two immiscible liquids are distilled together, the amounts of each component in the distillate are constant. Also, the boiling point of the mixture is lower than that of either of the individual components. This is because the components do not have compatible intermolecular forces, and so the component in lesser concentration will form “ bubbles”, like oil droplets in water, weakening the overall intermolecular forces in the mixture, and thus lowering the boiling point.

This process allows high-boiling compounds, which can decompose before they boil if heated alone, to be distilled at temperatures below ICC. Once the liquid mixture is heated to its boiling point, the liquid is converted to vapor. The vapors, richer in a more volatile component, are then condensed into a separate container. Possible Compound ands: Results: A. Distillation 1.

Procedure a. ) Start circulating the cooling water in the condenser and adjust the heat so that the liquid boils rapidly. During the initial stages of the distillation, continue to maintain a rapid boiling rate.

The drops steadily flowed from 84°C up to the final 107°C. Conclusion: While we did not have a defined separation between the two solutions, we successfully distilled all of the components of our unknown solution throughout the temperatures 84°C – 107°C. Discussions: While we have taken our time in the heating process, there is always a possibility of heating too quickly which could lead to inaccurate results in the distillation process. – We did not achieve a definitive point of separation between the two solutions because we did have a steady drop. This is likely due to the closeness of their temperatures.