Fractional distillation experiment assignment

In the experiment of distillation we separated two miscible liquids. The purpose of distillation is to identify and purify compounds. We began our experiment by setting up an apparatus for macroscale simple distillation. We used 60 ml of Cyclohexane/ Toluene. We began with the temperature at 50 degrees Celsius. Unfortunately, we reached an error when the compounds evaporated too rapidly. The compounds evaporated so quickly that we lost data from 2 ml to 13 ml.

The heat was lowered and as a result we started to see a constant rate. From 14 ml to 18 ml it stayed at the rate of 90 degrees Celsius, from 19ml to 25 ml it was at 93 from 26ml to 38ml it stayed in the 90’s for several minutes. When it reached the 50ml mark our temperature was at 108 degrees Celsius. Next we conducted the fractional distillation experiment. We tightly packed the fractionating column with a copper metal sponge, poured our mixture into the 100 ml flask and waited for the mixture to reach boiling point.

The boiling point temperature started at 83 degrees Celsius we then decreased the temperature until we reached 25ml which was 82 degrees Celsius. Our results for the Toluene were 1. 4810 and 1. 4350 for the Cyclohexane. Unfortunately in the experiment for simple distillation, we reached an error when the compounds evaporated too rapidly. This was one source of error that disarrayed our data. The compounds evaporated so quickly that we lost data from 2 ml to 13 ml.

Even though the data was not recorded it still was a successful experiment. This mistake has taught me to always keep a close eye on experiments no matter how slow the rate is. In the experiment of fractional distillation our

results were reasonable but I believe that if we would have placed the aluminum foil around the fractionating column we could have minimized the temperature fluctuation during distillation.