**Conclusion**

The theoretical yield was 0.98g of cyclohexanone, while the experimental yield was 0.133g of cyclohexanone, leading to a 13.57% yield. The yield was originally over 300% as the weight was around 3g more than the theoretical yield. However, this was because the solution also contained a bit of a the aqueous solution, as the bubbles could be spotted in the flask including the organic layer. The only way to get rid of that was to perform the vacuum filtration again for a longer period of time or with a vacuum stronger than the previously used which gave over 300% yield. Thus, the solution went through a vacuum filtration of 15-20 minutes more, giving us 13.57% yield. However, when the IR spectrum was supposed to be run, the salt plates were needed. Some of the salt plates were cracked and some weren’t function well with the IR spectrum, giving unexplained peaks on the computer. In a perfect world an OH peak shouldn’t appear in the spectrum, which would be a broad and big peak between 3300-3500. A C-C alkanes peaks should be seen in the IR spectrum, with the peaks around 3000. And C=O peak should appear, which should be around 1750’s.

In this experiment, while I was transferring the solution rom the side arm flask to a normal beaker, the solution fell off from the side arm of the flask and the solution was lost. Thus, a final IR was not completed. But I was expecting my IR to contain the dichloromethane, as a contaminant, around 1250 and 720.

In conclusion, cyclohexanone was prepared from cyclohexanol using hypochlorous acid. Glacial acetic acid and bleach were mixed to create hypochlorous acid. Which then reacts with cyclohexanol reagent in order to create cyclohexanone. Sodium bisulfate was used to remove excess hypochlorous acid from the solution, however it will leave behind an excess of protons, making the solution slightly more of an acidic nature. In order to neutralize the reaction NaOH was used. Then sodium chloride was used to decrease the solubility of hexanone. After that the extraction as performed by adding 5ml of dichloromethane twice, and then extracting the organic layer and leaving the aqueous layer in the seperatory funnel. Then sodium sulfate was used to drying the organic layer. Then vacuum filtration was performed to evaporate the dichloromethane. However, at this point even though warm water was placed under the side arm flask the evaporation of dichloromethane took longer than 45 minutes. Although, when the evaporation finally occurred, there was 13.57% yield of the solution; around 0.133g of cyclohexanone. However, as said earlier, I expected the IR to show impurities of dichloromethane. However this was not done due to a very bad day or damaged salt plates, IR spectrum acting up, and the solution being lost through a side arm flask.