**The Grignard Reagent**

**Data**

* 0.1442g of Mg
* 0.731g of Benzophenone
* 22.38% yield.
* Melting Point Range = 143-149C

**Conclusion**

The main purpose of this lab was to create and learn the process of making a Grignard reagent. In which later we will use in our own reaction to a carbonyl in a nucleophilic reaction resulting in the creation of triphenylmethanol. The product that was formed had a melting point range of 143-149C, which the expected was suppose to be 160-163C. This signifies that there were impurities in the product. In the lab experiment the the organic layer was washed with sodium chloride which helped remove water from the organic layer (while doing the step relation to the separatory funnel). Also the solution was dried with anhydrous sodium sulfate (Which should’ve taken out the water).The IR shows that there is a huge OH peak, which indicates that this step was poorly done. In addition, while taking out the stirrer from the flask with a magnet, the magnet touched the solution (the magnet has been used by countless other students in different courses to remove their stir bar once in the flask), which could indicate that a lot of contaminants and impurities could’ve been exposed to the solution. Thus the crystals that were formed were impure and they interfere with the crystal lattice of the pure compound, allowing it to decrease the melting point. Last but not least, the melting point machines that we have aren’t the finest. In order to improve this lab for the future, the magnetic stir bar should be taken out with tweezers if possible, if not rinse the magnet. Also, to use a digital melting point tester. In conclusion, the triphenylmethanol product was isolated but it had a few impurities.