

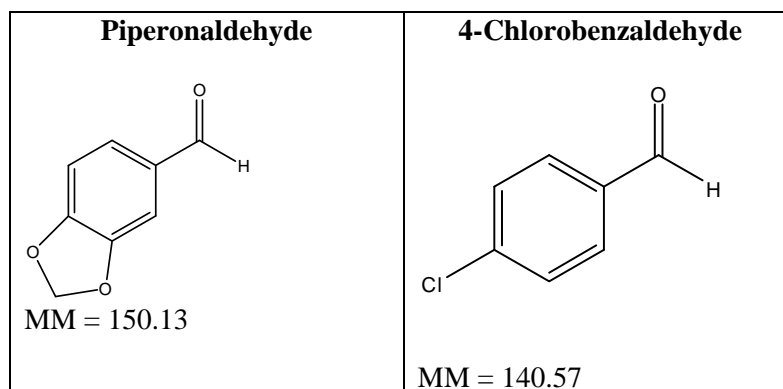
Lab 11: Aldol Condensation

Reading

- Pavia, et al. 3rd edition, Expt. 35, pp. 316-319.

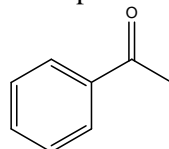
Procedural Notes

- We will use the product of this experiment for the next experiment (Michael Addition). Therefore, we need to scale up all of the quantities by ~2.5 times.
- You will recrystallize your entire sample rather than the smaller quantities listed in your lab book. In addition, we will use an Erlenmeyer flask rather than the Craig tube for recrystallization.
- You will be assigned one of the following substituted benzaldehydes. Be sure to include both in your HAZ-MAT section.



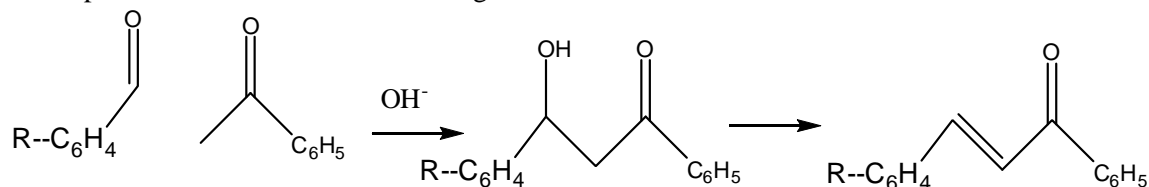
- Each of the above substituted benzaldehydes will react with acetophenone.

Acetophenone



MM 120.15
D = 1.03 g/ml

This type of crossed aldol reaction is called the Claisen-Schmidt reaction. In this reaction, the nucleophile enolate intermediate ion originates from a ketone.



You will be assigned one of the above aldehydes and you will then synthesize, isolate, and purify the product by crystallization. **CAUTION:** Many of the products in this reaction can cause itching and rashes if they come in contact with your skin. Hence, you should avoid all contact and wash your glassware thoroughly.

Postlab Questions

Answer these questions in your lab notebook after your conclusion is a section titled “Post-lab Questions”

1. Write a balanced equation for the reaction with piperonaldehyde and acetophenone.
 - a. What would the theoretical yield be if we used the textbook stated masses for the reaction of piperonaldehyde with acetophenone?
 - b. Would this be enough for the Michael Experiment?