

Report Guidelines for Aldol Condensation (Synthesis of Dibenzalacetone)

PRE-LAB Guidelines

Pre-lab and Post-lab reports MUST be written inside your lab notebook. The pre-lab is due on **May 3, 2016** or **May 4, 2016**. Type written reports will NOT be accepted (with the exception of graphs).

On line Technique and Resources For This experiment

Click on the title below to download the video (require [Real Player](#))

If you have trouble downloading the videos, go to the following Web site and click on the appropriate title to download the video.

[Guides for Writing Lab Reports](#)

[Vacuum Filtration 1](#)

[Vacuum Filtration 2](#)

You will start & finish this experiment on Tuesday May 3, 2016 or Wednesday May 4, 2016 and it is a ONE lab period.

1. Introduction: In this section, outline the goal(s) of the experiment as well as the experimental techniques that you will be using to purify and isolate the desired product(s).
2. Prepare a half-page flow chart of the experimental design; indicate on your flow chart a time plan for the experiment that will allow you to complete the work in two hours. Be sure to use the time the reaction is stirring for other activities. ***Make sure to reference the procedural steps in the lab manual.***
3. List the equipment that you will need to have on hand for each step in the procedure for period 1.
4. Provide MSDS information for the following chemicals:

Benzaldehyde & Acetone

You should record the following MSDS information in your notebook for the chemicals listed above.

(Printouts directly from the Web pages will NOT be accepted!!)

- (a) Product Name
- (b) Chemical Formula
- (c) Formula Weight
- (d) Melting point, boiling point and density (also known as specific gravity)
- (e) Health hazard data (*summarize in your own words*)
- (f) Spill and disposal procedures (*summarize in your own words*)

5. Draw the three possible isomers of dibenzalacetone.

(Hint: Consider the stereochemistry around the two double bonds. Remember that there is no free rotation about a double bond.) Give BOTH the common and IUPAC names for each of the isomer structure. Which one you expect to be the most stable one? Why?

POST-LAB Guidelines

This is an INDIVIDUAL report (due May 12 or May 13, 2016)

I. Abstract

Summarize the results and describe what you did in the experiment including techniques that you used in synthesis, purification and identification.

II. Data and Observation

- Report all reagent amounts, any procedural changes to the (original) directions
- In an organized format, write down ALL the observations that you recorded during the experiment.
- Report the volume of ethanol that you used during the recrystallization step.
- Describe the product that you obtained.
- Report the weight and the melting point of the recrystallized product.

III. Results and Discussions

- Show chemical equations used to calculate the limiting yield.
- Calculate the percentage yield of dibenzalacetone that you obtained and compare it with the literature (*Org. Synth.* **1932**, 12, 22)
- Compare your melting point to the literature value(s) for dibenzalacetone.
- What can you conclude about the purity of the compound that you isolated? Explain briefly.

Note: Review melting point theory in 14BL or consult the Mohrig's text.

IV. Conclusion

Summarize your results and discussion including possible reasons for the percentage yield you obtained, reasons for the differences in your experimental melting point and the literature value, and implications on the purity.