

Laboratory Notebook Preparation

Chem 2062 Spring 2005

Before you come to lab, it is your responsibility to read the experiment and procedure very carefully, and make sure you understand it. The experiments we will be performing this semester will not be trivial, therefore familiarity with the procedure and the concepts involved is essential to your success and safety. This is why you need to carefully prepare your laboratory notebook *before* each experiment.

Getting your lab book ready should not be mere busy-work that you figure you can do in the few minutes before (or during) lab. This is something that you need to spend a considerable amount of time preparing, since the more complete your lab book is before the lab starts, the better equipped you are to perform the experiment. Also, if you have a well-kept notebook with all your data organized neatly, your laboratory report will almost write itself!

Laboratory notebooks will be checked regularly throughout the semester. If yours is not complete, you will not be allowed to start the experiment until it is. Use this procedure¹ to prepare your notebook for this lab and every lab from now on.

1. Number each page. Allow space at the front of the notebook for a table of contents. Use a hardbound (not spiral-bound), lined notebook, and keep all notes in ink. You may continue using a notebook you started in Organic I if you like.
2. Date each entry, starting on a fresh right-hand page.
3. Give a short title to the experiment, and enter it in the table of contents.
4. State the purpose or problem of the experiment. What are we trying to accomplish? What good is this technique? What are we going to learn?
5. Briefly summarize the course of action that will be used to satisfy part D above.
6. When appropriate, include a working hypothesis regarding the outcome of the experiment.
7. Write balanced equation(s) for any reaction(s) that will be performed in the experiment (no need to reproduce reactions from the book that we won't be performing), with structures of important starting materials, intermediates, and products.
8. Prepare a table of quantities (mmols, concentration, g, mL, as needed) of each chemical required along with any important physical constants (mp, bp, MW, d, solubilities as needed) usually from the textbook. Leave room in this table to write the amount you *actually* use.
9. Give a reference to the source of the experimental procedure.

¹ Lehman, J.W., *Operational Organic Chemistry*. Upper Saddle River: Prentice Hall, 1999.

10. Write out the procedure with just enough information so that you can follow it easily. Often this can conveniently be in the form of a flowchart or outline. Do not simply copy the procedure from the test.
11. Note any hazards and safety precautions. If severe, make them bold or circled.
12. State how *all waste* will be disposed of. Usually we will have appropriate waste containers but often the procedure will require special waste disposal procedures (neutralizations, etc).

During the Lab

1. Don't forget to record all your observations as they happen, in the next section of your lab notebook.
2. Record all data (masses, melting points, appearances of product) in tabular form in your lab book. Do not write data on scratch paper and then transfer into your book – use the blank left-hand pages for scratch notes and calculations.
3. Work neatly! *Please* keep your area, and more importantly the public areas like hoods, balances, reagent areas clean! Don't leave burners on, don't leave garbage in the hoods, don't leave messes on or around the balances. When you're finished, wipe down your bench space *and* the hood you worked in. Messiness in the lab can be a pet peeve of mine, but if we all pitch in and clean up after our own mess while we go, it won't be a problem.
4. Learn together! This is *not* a competition, and you are not in this alone, either. You and your classmates are in this together, and are in the unique position to help each other. The grades are based on pre-specified criteria so hurting your neighbors will *not* help you. So please, help each other, talk to each other, learn from each other!