Chemistry 267 Fall, 2008

Schedule of Experiments

Before coming to lab, download the experimental procedure and any other necessary handouts from the web, read that material and the assigned material from the lab text, do the OWL prelab assignment by the due date, and prepare a prelab outline. Downloads are found at "http://www.chem.umass.edu/people/samal/orginorgsites.html".

References given below are to your laboratory textbook, *Macroscale and Microscale Organic Experiments*, 5th Ed, by Williamson, Minard, and Masters. Bring to lab this text, your safety goggles, and your laboratory notebook, in which the prelab outline will be written. The required laboratory notebook is one in which a carbon copy of each page can be made and torn out. Before you may begin work, a carbon copy of the completed prelab outline and any other prelab material for that experiment must be submitted to your TA. Some references given below are to Wade, which refers to the lecture text, *Organic Chemistry*, 5th or 6th Ed, by Wade. These refs provide background information.

Carefully read Chapters 1 and 2 in the lab text, and the handouts on Safety and Waste Disposal, Notebook and Grading Policies, and Make-up Policies and Procedures. You are responsible for knowing and following the contents of these handouts. Review and refer to this information throughout the semester. Refer to the text author's instructions on keeping a good notebook. This is given on the publisher's website – a link to this is given on the Chem 267 home page. (another example is also posted on the Chem 267 website).

You must wear approved eye protection at all times while you are in the lab. Failure to do so will result in the loss of credit. Repeated failure to do so will result in expulsion from the course.

For many experiments, the procedures to follow are those given in the handouts obtained from the web, not the procedures given in the text. For such cases the readings from the text provide background information and describe general techniques that will be followed. In other cases, especially later in the semester, the handouts will simply provide changes and suggestions and the procedure will mainly come from the text. When this is so, it will be specified in the handout.

WEEK

1 Introduction and Check-in. Sept 4.

2 Sept 11. Two experiments will be done.

Melting Points. Read Chapt 3, pp. 38-42, 46-51. Check in. A Mel-Temp device will be used to determine melting points. CAUTION: Always turn both the Mel-Temp AND the digital thermometer off when you are finished using the apparatus.

and

Thin Layer Chromatography. Read Chapt 8, pp. 172-185, 191, 192.

(Two separate reports will be written, one for MP and one for TLC.)

3 Recrystallization - Part 1. Sept 18. Read pp. 42-45, Chapt 4, pp. 61-81, 85-87 (omit "Macroscale" procedures). Include the prelab exercise on p. 61 as part of your prelab outline. Ref: Wade, Sect 2-11.

4 Recrystallization - Part 2. Sept 25. Review Chapt 3 (MP), 4. Finish Recryst - Part 1 if necessary.

5 Introduction to Molecular Modeling. Oct 2. Read Chapt 15, pp. 307-314. Ref: Wade, Sect 3-7 through 3-14.

6 Laboratory Safety Training by Environmental Health and Safety. Oct 9.

7 Extraction of Acids and Bases. Oct 16. Read Chapt 7, pp. 135-145, 147-153. Review MP, Recrystallization. As part of your prelab outline, include a flow diagram for your extraction (example on p. 148).

8 Extraction of Acids and Bases (continued). Oct 23. Finish Week 5.

9 Isolation of Trimyristin and Its Hydrolysis. Oct 30. Ref: Wade, Sect 25-1 through 25-4.

10 Alkenes from Alcohols. Nov 6. Review Chapter 15. Read Chapt 10, pp. 215-223, 228, 229. Modeling will be done outside of lab time in the Org Lab. Ref: Wade, Sect 7-7 through 7-7C.

11 Radical Chlorination. Substituent Effects. Nov 13. Read Chapt 18, pp. 341-349 and review GC (Chapt 10). Ref: Wade, Sect 4-13, A, B.

12 Distillation. Nov 20. Review GC. Read Chapt 5, pp. 88-99, Chapt 3, pp. 54-56. Include prelab exercise (a) on p. 88 as part of your prelab outline.

13 Preparation of Cyclohexene. Dec 4. Read Chapt 19, pp. 351-354, Yield Calc's, pp. 355, 356, and Chapt 11, pp. 231-242. Review distillation and GC. Include the prelab exercise on p. 351 as part of your prelab outline. In your prelab outline, prepare a table as shown on p. 326. Ref: Wade, Sect 7-10, 11-10, 12-1 through 12-7.

14 Searching the Chemical Literature. Dec 11. Read Chapter 68. You will be assigned to do a literature search using traditional library methods as well as online methods. Check out of locker. **NOTE**: If you do not check out properly, you will lose the credit equivalent to one experiment (10 pts).

All reports are due at the last lab meeting. Reports, even those considered to be late, will not be accepted after Mon, Dec 15 at noon.

Make-up Policy. To make up an experiment, a valid, well-documented excuse is required. All lab work must be made up within one week of the lab period which was missed. After this it will be considered to be late and will lose credit at the rate of one point per day. You must arrange a make-up time as soon as possible and submit a "Make-up Request Form". Follow exactly the procedure described in the handout, "Make-up Policies and Procedures". A TA signature is required on all work including make-up work.

Grades and Quizzes. See the handout, "Notebooks and Grading " for details.

Electronic communication. For your convenience, timely announcements about Chem 267H may be occasionally made via the Chem 267H web site and also via email through the OWL system (be sure your email address in OWL is one that you use regularly). You may also contact the course instructor via email or at his office in LGRT-304B.

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