

Chemistry 3719L – Organic Chemistry Laboratory I

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Textbook: Laboratory Manual: **Introduction to Organic Laboratory Techniques; A Small Scale Approach.**
ISBN 0-534-40833-8 (Pavia, Lampman Kriz, and Engel)

General

Chemistry 3719L is the laboratory course that complements 3719 lecture, Organic Chemistry I. As in General Chemistry, we will be studying the physical characteristics of compounds and their reactions to form new materials, however in Organic Chemistry we focus on the compounds containing carbon. Since most of the theoretical material covered in lecture has been investigated by experimentation, it is important that you see 3719 and 3719L as being closely interconnected.

Equipment

- You will need a pair of OSHA approved goggles for all laboratory work and these are to be worn **at all times in the lab** (points will be deducted if you consistently fail to comply). A lab coat is strongly recommended, as are a pair of heavy-duty dishwashing gloves. Since most of the chemicals you will be working with are potentially dangerous, it is essential that you act responsibly in the lab, and follow all safety directions. Wearing shorts is a bad idea; wearing open-toed sandals is forbidden.
- You will also need a lab notebook. A composition book is sufficient, the only types that are disallowed are spiral bound notebooks and loose paper.
- You will be assigned a locker and a set of organic laboratory equipment which will be used throughout the semester. If any glassware is broken report it immediately to the instructor and it will be replaced at no charge. Throughout the lab there will be stations for communal use (weighing balances, solvent hoods). These are to be kept clean at all times and the instructor may assign you to clean up an area at the end of or during a lab period.

Experiments

The first week of 3719L will be spent learning how to use the equipment and glassware commonly seen in the organic lab, and the results of these simple exercises will be summarized in a report due in the 2nd week of term. We will then move on to actual reactions in which you will be required to convert a given material into a product using chemistry discussed in 3719 lecture. This will require a “prelab,” the format of which will be discussed in the first week of lab. The results will be handed in as reports as outlined in the attached schedule. Your instructor will discuss the requirements for reports and a general format that should be followed.

Academic Misconduct

Since **all** of the lab work assigned in Chemistry 3719L is to be carried out individually, there is to be no “communal” preparation of reports for handing in for grading. The instructors will sit down and discuss the grading of reports on a weekly basis; therefore reports of a suspicious nature will be found. In addition to the guidelines published in the University’s Student Code of Conduct (found at www.ysu.edu), the following is a list of offenses that will at least result in a zero grade for the assignment and may result in disciplinary action at the University level. **This will include failing the class** and possibly expulsion from the University.

No copying verbatim from the textbook under any circumstances.

No sharing of data, unless expressly being allowed to do so by your instructor.

No sharing of computer files for the “copying and pasting” of reports (this includes data tables).

Be careful; don’t jeopardize your entire career to save time when writing reports. If you submit a piece of work in any Organic Chemistry class at YSU that only has your name on it, make sure it is entirely your own work.

Chemistry 3719L

Organic Chemistry Laboratory I

Summer I 2009

MWF Section Lab Schedule

Lab Session	Experiment and Topic	Assigned Reading	Report Due
M	Check In , Lab Rules, Safety, Notebook, Glassware, Balances, Heating Mantles, Hot Plates, Rotary Evaporator, Hot Water Baths.	558-591, 611-614, 643	Friday, 5/22/09 by 5pm (10 pts)
W	Solubility – Parts A, B, C, D. REPORT – Parts A, B, C, D.	8-14, 669-676	
F	Crystallization – Part A, B, C. REPORT – Parts A, B, C.	18-25, 645-653, 659-669, 679-698	
closed	Memorial Day – YSU closed.		
W	Crystallization – Parts A, B, C. REPORT – Parts A, B, C.	18-25, 645-653, 659- 669, 679-698	Friday, 5/29/09 by 5pm (10 pts)
F	Extraction – Parts B, D. REPORT – Parts B, D.	26-36, 698-719	Wednesday, 6/3/09 by 5pm (10 pts)
M	Simple Distillation. REPORT – Distillation Curve p50. <i>Note – each student will perform a simple distillation, no pairs.</i>	46-51, 723-743	Friday, 6/5/09 by 5pm (10 pts)
W	Thin Layer Chromatography – Handout.	819-831	Monday, 6/8/09 by 5pm (10 pts)
M	Exp. 23A - Synthesis of <i>n</i> -Butyl Bromide.	187-193	Tuesday, 6/16/09 by 5pm (10 pts) Tuesday, 6/16/09 by 5pm (10 pts)
W	Exp. 23B - Synthesis of <i>t</i> -Pentyl Chloride.	187-193	
F	Completion of substitution reactions (S_N1/S_N2).	187-193	
M	Exp. 24 - 4-Methylcyclohexene.	193-197	Friday, 6/19/09 by 5pm (10 pts)
W	Exp. 24 - 4-Methylcyclohexene – tests on product (IR, NMR, chemical).	193-197	
M	Exp. 20 - S_N1/S_N2 .		Wednesday, 6/24/09 by 5pm (10 pts)
W	Clean up and check out.		

14 lab sessions total, 90 points for reports, 10 points for technique

100 Points total for 3719L