

GENERAL LABORATORY INFORMATION

Each individual student will be permitted to do laboratory work only after she/he has:

1. Read the safety rules and certified so in writing.
2. Furnished her/his own acceptable safety goggles.

Laboratory sessions of Chemistry 334L will begin with a pre-laboratory conference lasting approximately fifteen to twenty minutes, during which various aspects of the experiment to be performed will be discussed. Experiments are designed to be carried out in approximately 2 1/2 hours.

Students are required to attend all laboratory periods of the section in which they are enrolled. Subject to limitations of space and equipment, laboratory days may be switched as long as the same experiment is still in progress and written arrangements are made with another laboratory instructor in advance. Only under unusual circumstances will an excused absence be permitted to be made up, and then only by written authorization by the laboratory instructors in both the regular laboratory period and the make-up laboratory period. Excused absences, substantiated by appropriate written confirmation, will result in no penalty. Unexcused absences will result in a zero for the experiment(s) in question.

In conformity with California State University, Northridge standards of academic conduct, all experimental and written work must be done by yourself. Students violating this standard will receive a zero for the work in question and will have their case referred to the Student Affairs Office for appropriate disciplinary action.

Bring the following items to laboratory sessions: a pair of safety goggles, the California State University, Northridge Chemistry Department Chemistry 334L laboratory manual and a **bound** (not a loose-leaf or spiral-bound) laboratory notebook (e.g., National #43-461) with every page numbered in ink.

Before coming to laboratory sessions, read the procedures for the assigned experiment in the Chemistry 334L laboratory manual. Also read any suggested material in the lecture textbook. Complete the appropriate pre-lab preparation (viz., items 1–7 below) in your laboratory notebook.

All work in the laboratory notebook must be written in ink (not pencil). Never use white-out. Use the left-hand pages for initial data collection and rough calculations. Reserve the right-hand pages for the experiment write-ups. Do **not** use loose scratch paper for recording data!

Each laboratory notebook write-up should be concise, but it should also be accurate, neat, well organized and complete. The following items normally are required in a complete write-up.

1. Date.
2. Title and/or statement describing the experiment to be performed.
3. Balanced equation(s) for any reaction(s) involved, using structural formulas for organic reactants and products. Include any potentially important side-reactions.
4. Brief but specific reference to the source of directions.
5. Table of physical properties for all reactants, solvents and products involved in preparative experiments. Use the following column headings:

compound MW mg or mL mmol ratio m.p. b.p. density

For each reactant, the weight in milligrams (or volume in milliliters) and the number of millimoles should be those actually used in the experiment. For products, the figures in these two columns should be the amounts expected on the basis of theory if the reaction went 100% to completion as indicated in the balanced equation. Include solvents in this table, but do not calculate the number of millimoles used.

6. Summary of safety precautions and hazardous chemicals.
7. If appropriate, a flowchart of the workup, isolation and purification sequences. A one- or two-sentence summary should indicate the methods employed.
8. Changes, if any, in the experimental directions made by the instructor.
9. Record of any qualitative observations, numerical data, calculations and results. Detailed description of any unexpected experimental behavior.
10. Conclusions, with comparisons to data from the chemical literature (preferably in the form of a concise table.)

Note: The reference room in Oviatt library contains some very useful books for obtaining information for items 5, 6 and 10. Consult these references for pre-lab preparation and notebook write-ups.

Section QD (Chemistry)

1. The Aldrich Catalog and Handbook of Fine Chemicals
2. The Dictionary of Organic Compounds
3. The CRC Handbook of Chemistry and Physics
4. Lange's Handbook of Chemistry

Section T (Engineering/Technology)

1. Dangerous Properties of Industrial Materials, 7th edition

Additional reference books are available in the Chemistry section of Oviatt library.

Material Safety Data Sheets (MSDSs) contain an abundance of safety information and are available for most common chemicals. An excellent MSDS site is: <http://msds.ehs.cornell.edu/msdssrch.asp>.

Additional online chemical data can be obtained at: <http://chemfinder.cambridgesoft.com/>.