

## GENERAL LABORATORY INFORMATION

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

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

By enrolling in this class, students agree to perform all experimental and written work according to California State University, Northridge policies of academic honesty and integrity. Students violating these standards will receive a zero for the work in question and will have their case referred to the Student Affairs Office for appropriate disciplinary action. See pages 536–538 of the 2008–2010 California State University, Northridge catalog for details of the University policies.

Students are required to attend all laboratory periods of the section in which they are enrolled. Excused absences, substantiated by an appropriate written confirmation received within two weeks, will result in no penalty. Unexcused absences will result in a zero for the experiment(s) in question. A maximum of two excused absences will be allowed.

Before coming to laboratory sessions, read the procedures for the assigned experiment in the Chemistry 334L laboratory manual. Watch the Learning Resource Center's technique DVD that is noted for the current experiment. Also read any suggested material in the lecture textbook. Complete the appropriate pre-lab preparation (viz., items 1–7 on the next page) in your laboratory notebook.

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.

Laboratory sessions of Chemistry 334L 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. A laboratory quiz will be given during this time, also. Experiments are designed to be carried out in approximately 2 1/2 hours.

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.

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