

RECRYSTALLIZATION

READING

Zubrick, Chs. 13 and 17
Instrument Handout *Using the Analytical Balances*

PROCEDURE

A. Recrystallization of Acetanilide from Water

Using the method described in Zubrick, recrystallize a 500 mg sample of the contaminated acetanilide (heat the water with a hot plate). You will be doing both gravity and vacuum filtration as part of the procedure. Report all observations, masses, and melting points as concluding data. As part of your analysis, calculate the percent recovery, which is a calculation that expresses what percent of the initial sample you recovered. Although your sample will be wet, calculate the % recovery today and then re-weigh the sample next time to obtain an even more accurate % recovery. Store your sample in a vial covered with a ChemWipe in your drawer to dry.

B. Recrystallization and Identification of an Unknown

You will be given a 100-mg sample that is either *trans*-cinnamic acid or *ortho*-toluic acid. You will recrystallize the sample from an ethanol/water mixed solvent (re-read Zubrick Ch. 13 sections “*A Mixed Solvent System—The Good Part/The Bad Part*”) and then collect appropriate other data to identify which compound you were given.

C. Selection of an Appropriate Recrystallization Solvent

Re-read Zubrick Ch. 13 section “*Finding a Good Solvent*”. You will determine appropriate solvent(s) for recrystallizing each of three compounds: *trans*-stilbene, 9-fluorenone, and benzoic acid. Your available solvents are hexane, toluene, acetone, ethanol, and water. Collect appropriate solubility data and justify what single solvent or solvent pair you would use for a recrystallization of each of the three solids.

D. Recrystallization of a Solid

Using the recrystallization data you collected in **Part C**, you will recrystallize one of the three solids assigned to you. Your instructor may weigh out initial samples and collect final samples for checking. Report all pertinent data, observations, and calculations.