

CHEM 30475 - Organic Chemistry Laboratory - Fall 1999
Answer Key - Lab Quiz #1

1. Crystallization
 - (a) Solvent B
 - (b) B or C mixed with A
 - (c) Yes, this is a problem. All impurities in original sample will NOT be removed.
 - (d) Either (i) boil off some of the excess methanol, or (ii) add second solvent that your compound is not soluble in.
 - (e) The sample contains some impurities, most likely solvent (water).
2. In sublimation, the sample goes directly from the solid to the vapor phase. In melting, the solid turns into a liquid.
3. In both cases addition of an impurity will result in a decrease in the melting point.
4. 25⁰C: Heated vapor hasn't reached thermometer
25⁰C - 69⁰C: Heated vapor starting to reach thermometer
69⁰: 'Pure' hexane vapor in equilibrium with liquid (at boiling point)
69⁰C - 40⁰C: 'All' of hexane vapor gone, toluene vapor hasn't yet reached thermometer
40⁰C - 111⁰C: Heated toluene vapor starting to reach thermometer
111⁰: 'Pure' toluene vapor in equilibrium with liquid (at boiling point)
5. *Didn't do "Eugenol from Cloves" lab*
6. Caffeine reacts with acid to produce a salt, which is much more water soluble and less soluble in dichloromethane than the neutral (uncharged) form. Sodium carbonate acts as a base to remove acid and prevent this reaction from occurring.
7. *Didn't do acid/base extraction*