

Chem 343

Name: \_\_\_\_\_

Quiz 2

Section: \_\_\_\_\_

**A melting point for a known substance was both high and broad? Why might that be? Circle all that apply.**

- 1) The sample was impure or wet.
- 2) The amount of sample in the tube was too large.
- 3) The ramp rate of the Meltemp instrument was too fast (sample heated too quickly).
- 4) The humidity level in the lab was very high.

**At the end of a recrystallization you are positive that you have just collected a very pure, crystalline solid on the vacuum filter. You take the melting point and are a bit discouraged: the melting point is lower than it should be and the range is a bit wide. Does this necessarily mean that you need to start over again? Why or why not?**

**When the crystallized product is collected via vacuum filtration,**

- a. the crystals should be stirred vigorously.
- b. the crystals should be rinsed with a large amount of room temperature solvent.
- c. the crystals should be rinsed with a large amount of cold solvent.
- d. the crystals should be rinsed with small aliquots of cold solvent.

**Which of the following scenarios is the best time to measure the actual boiling point temperature when using a microscale boiling point apparatus?**

- a) Read the temperature once a steady stream of bubbles is leaving the open end of the capillary tube.
- b) Take the temperature when the first bubble is noted leaving the open end of the capillary tube.
- c) Take the temperature when the liquid initially re-enters the capillary tube after a period of steady bubbling ...it may be just preceded by the last 'exiting' bubble being 'sucked' back into the capillary tube.
- d) Read the temperature when the liquid has completely filled the capillary tube.

**When you set up for microscale boiling point determination, you are asked to put a capillary tube into the test tube containing your unknown liquid. The capillary tube should be inserted:**

- a. open end down in the liquid
- b. closed end down in the liquid
- c. it won't matter because it really is just serving the same purpose of a stir stick or boiling chip
- d. the tube shouldn't be inserted in the test tube; it should be attached to the thermometer with a rubber band.

**You have set up for microscale boiling point determination correctly and are heating. You note the start of a small stream of air bubbles from the capillary tube. The rate of bubbling becomes faster and faster. Wait a minute! How much air could be in that tube? Explain.**