

Prelab 2b

Reading assignment: Techniques: Chapter 14, chapter 18, and chapter 19

Pre-lab questions

1. Are these techniques for *purification* or *characterization*:
 - a. column chromatography
 - b. TLC
 - c. melting point.
2.
 - a. How is TLC used to determine the purity of a sample?
 - b. How is TLC useful in determining the identity of a sample?
3. Which of these solvent systems would cause a compound to elute from the column fastest (a, b, or c)?
 - a. hexanes
 - b. 1:1 hexanes:ether
 - c. 1:1 ethyl acetate:acetone?
4. Why would a column be ineffective if you chose an eluting solvent that was too polar? Not polar enough?
5. In a melting point capillary, what happens if the capillary is filled too high?
6. In reporting a melting point range, how do you know when to start and end the range?
7. If a compound is not pure, what happens to the melting point of the compound compared to a pure sample?
8. Heating a sample more than 1-2 °C per minute may lead to what incorrect observation?
9. The more tightly a compound binds to the absorbent, the more _____ it moves on the TLC plate.
10. True/false: If two compounds have the same R_f value, you should conclude that they are the same compound.
11. For a silica gel plate, the more polar the compound, the slower it moves up the plate, giving a (larger or smaller?) R_f value.
12. Name three techniques for visualizing TLC plates.