

Name: _____

Chromatography

DATA SHEET

I. Paper Chromatography

List each color present in each sample and their corresponding R_f values in the following table:

Distance solvent front moved: _____

Sample	Colors of components after development	Distance component moved	R_f Values
Ink 1	Color: Color: Color:		
Ink 2	Color: Color: Color:		
Ink 3	Color: Color: Color:		
Unknown	Color: Color: Color:		

Which pen did the instructor use to prepare your unknown? _____

* Attach chromatography strip here *

(Circle one)

1:2 IPA

2:1 IPA

II. Reverse-Phase Chromatography

Write down the color of each dye as they elute from the column.

1	2	3

Name: _____

Chromatography

REVIEW QUESTIONS

I. Paper Chromatography

1. How is the R_f value of a component related to its polarity?
2. What component of your ink #1 sample had the largest R_f value? Is this component the most polar or the least polar substance that you observed for ink #1? Explain.
3. Why is it important to maintain the solvent level in the chamber below the point of application of the sample?
4. What is the stationary phase (substrate)?
5. What is the mobile phase (eluting agent)?
6. In paper chromatography, how does the solvent move up the paper?
7. What physical property allows components of a mixture to be separated in paper chromatography?
8. How is the R_f value calculated?
9. If the solvent front moves 8 cm and component A moves 6 cm and component B moves 4 cm, what are the R_f values for each component?
10. In theory, what are the largest and smallest possible R_f values?
Largest _____ Smallest _____

Name: _____

Chromatography

11. From looking at your chromatogram, would it be possible for two different components of a mixture to have the same R_f value (within a value of .1)? Explain.

12. . What is the consequence of your answer in question 11 in terms of using paper chromatography to positively identify chemical compounds?

13. Compare the R_f factors between your and your lab bench partners solvent systems.

II. Reverse-Phase Chromatography

14. How is reverse-phase different from paper chromatography?

15. Which is more polar? (circle one) water isopropyl alcohol

16. In the reverse-phase chromatography experiment, does the most or least polar component elute first? Explain.

17. If you only used water as the mobile phase and didn't use any isopropyl alcohol, what would have happened?

18. What is the most polar food coloring in the mixture?

19. What is the least polar food coloring in the mixture?