

DATA SHEET
CHROMATOGRAPHY

I. Paper Chromatography – BIC INKS

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

Distance solvent front moved: _____ **(denominator)**

Sample	Colors of components after development	Distance component moved (numerator)	R_f Values
BIC RED:	Color: Color: Color:		
BIC BLUE:	Color: Color: Color:		
BIC GREEN:	Color: Color: Color:		

* Attach chromatography strip here *

(Circle one)

1:2 IPA

2:1 IPA

Reverse-Phase Chromatography

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

1	2	3

II. Paper Chromatography – VIS-A-VIS INKS

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

Distance solvent front moved: _____ **(denominator)**

Sample	Colors of components after development	Distance component moved (numerator)	R _f Values
VIS RED:	Color: Color: Color:		
VIS BLUE:	Color: Color: Color:		
VIS GREEN:	Color: Color: Color:		
UNKNOWN:	Color: Color: Color:		

* Attach chromatography strip here *

(Circle one)

1:2 IPA

2:1 IPA

What **color** ink was your unknown? _____

What **brand** ink was your unknown? **(circle one)**

BIC

VIS-À-VIS

* Attach UNKNOWN chromatography strip here *

REVIEW QUESTIONS CHROMATOGRAPHY

I. Paper Chromatography

1. How is the R_f value of a component related to its polarity?
2. Is the component of an ink with the largest R_f value the most polar or the least polar component of that ink? 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?
5. What is the mobile phase?
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 _____
11. Compare the R_f factors between your and your lab bench partners' solvent systems. Which solvent produced the most distinct (clearer) chromatograms, the 2:1 IPA solution or the 1:2 IPA solution?

II. Reverse-Phase Chromatography

12. *How is reverse-phase different from paper chromatography?*

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

14. *In the reverse-phase chromatography experiment, does the most or least polar component elute (come out) first? Explain.*

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

16. *a) What is the most polar food coloring in the mixture?*
b) What is the least polar food coloring in the mixture?