FLINN SCIENTIFIC

Name_____

Introduction to Thin-Layer Chromatography Worksheet

Data Table

Band	Distance (mm)	Band Color	R_f
Solvent front (Plate 1)		——	——
1. Methylene blue			
2. Safranin			
3. Eosin Y			
Solvent front (Plate 2)		——	——
4. Fluorescein			
5. Fast green FCF			

Post-Lab Analysis and Questions

1. Since the samples are dyes, they are relatively easy to see. Draw representations of each of the TLC plates, including the dye colors and locations, as well as the starting spot and final solvent front locations in the space below. To compare and identify compounds separated by TLC, calculate the R_f (rate of flow) values for each dye, using Equation 1.

$$R_f = \frac{\text{distance traveled by dye}}{\text{distance traveled by solvent front}}$$ *Equation 1*

Record R_f values for each of the dyes in the data table above.

2. Which dyes appear to be in your unknown?

3. Knowing that the solvent is quite polar, what can you infer about the relative polarities of the various dyes?

4. Use Figures 1 and 3 from the *Background* section to identify chromophores, auxochromes, and solubilizing groups for each of the dyes used in the activity. How might each be responsible for the position of the dye on the chromatogram?