

NAME \_\_\_\_\_

CHEMISTRY LAB

DATE \_\_\_\_\_

## SEPARATION of the COMPONENTS of a MIXTURE through the USE of CHROMATOGRAPHY

### MATERIALS:

Large Test tube	pin holder
Test tube rack	black and red ink
Rubber stopper	metric ruler
filter paper	

### PROCEDURE:

1. Place a small but concentrated spot of ink (black on one strip, red on the other) at the **point of application**.
2. The large test tube will serve as the **chromatography** chamber. Do not pick up this tube or slosh the water in the bottom about.
3. Insert the paper **chromatogram** into the pin holder. Be sure the paper strip hangs straight in the tube and does not touch the edges. Adjust the paper so that the tip is just immersed in the **solvent** in the bottom of the tube. **DO NOT SUBMERGE THE POINT OF APPLICATION IN THE SOLVENT.**
4. The solvent will move up the strip carrying the mixture with it. Observe your chromatogram often. After 40 minutes, remove it from the tube.
5. Mark the solvent front with a pencil. Air dry the chromatogram. When it is dry, outline each colored area or band with a pencil.
6. Measure the distance each substance travelled (in millimeters from the point of application) and the total distance travelled by the solvent (from the POA).
7. Using these values, calculate the **R<sub>f</sub> value** for each pigment.

### VOCABULARY:

While your group is observing the experiment, use your class notes to define the following terms:

**POINT OF APPLICATION:**

**CHROMATOGRAPHY:**

**R<sub>f</sub> VALUE:**

**SOLVENT FRONT:**

**CHROMATOGRAM:**

### **Chromotography Lab-- continued**

In the space below, make drawings of your completed chromatographs. Indicate the point of application, the solvent front, the outlined spots, and the distances measured in millimeters:

**CHROMATOGRAM 1(Black)**

**CHROMATOGRAM 2(red)**

Create a table which lists the colors of separated pigments, distances travelled, and Rf factor for each. For purposes of this experiment, name the pigments "A", "B", "C"....etc