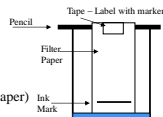


Paper Chromatography Lab

Obtain the supplies you'll need.

- 1 large beaker
- 1 small beaker filled with water
- filter paper cut into 4 strips of identical size
- 4 black markers for testing
- 4 small pieces of masking tape
- Glass stirring rod (to attach to the top of the filter paper)
- Timer



- Write the marker number on a piece of masking tape and place it at the top of the strip.
- Choose one of the testing markers and draw a thick line near the bottom of the filter paper - about 2 cm from the bottom.
- Pour a small amount of water into the beaker and then hang the paper strip in the beaker. **Make sure the ink line does not touch the water** – only the bottom of the filter paper.
- Allow the water to move up the paper for 10 minutes and then remove the strip from the water. Hang it on the side of the table to dry.
- Follow these directions to test the other markers.

Marker	#1 Marks A-Lot	#2 vis-à-vis	#3 School Smart	#4 Scented
Colors observed in ink sample				
Distance traveled <u>marker color</u> by the sample component				
Distance traveled by the solvent				
Rf value				

Questions:

In this experiment, what is the purpose of the water?

What colors did your group observe in each of the black ink samples?

Do the colors occur in the same order on all the samples? Explain.

Did some ink samples not work? If so, why not?

Compare and contrast the Rf value for the different markers.

Chromatography Challenge

Application Question:

Earlier today, the girl's bathroom was vandalized with graffiti.

Fortunately, 4 girls were apprehended and questioned.

Each of the girls apprehended was caught leaving the bathroom with a black marker.

- Suzy Q had a black Marks-A-Lot marker.
- Margie B had a black Vis-à-vis marker.
- Polly X had a black Scented marker.
- Jeanie P had a black School Smart Marker.

VonFischer asked the chemistry class to help determine which marker was used for the act of vandalism. After using paper chromatography to test the marker it was found that the marker used had a Rf value of 0. Can you single out (or narrow down) a culprit for Mr. VonFischer?

Chromatography Lab Report

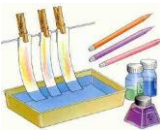
For credit submit a complete Lab Report

Due Date _____

Follow the **SCIENCE LAB REPORT TEMPLATE**

Include The Following:

- Title
- Objective/Purpose
- Background Information/PRE-LAB Vocabulary
- Materials (ALL the Materials Needed to complete the lab.)
- Procedure (List ALL the steps needed to complete the LAB.)
- Data Table with measurements and observations
- Pictures/Diagrams to help explain the experiment and/or data.
- Calculations (R_f Value)
- Answers to ALL Questions



Chromatography Lab Report Rubric

Category	0	1	2	3	4
Lab Titles	No titles given for the lab.	Missing more than 2 of the following... <ul style="list-style-type: none"> • Title of Lab • Date of lab • Lab Partners • Period • Sections of lab 	Titled lab, but missing 2 of the following... <ul style="list-style-type: none"> • Title of Lab • Date of lab • Lab Partners • Period • Sections of lab 	Titled lab, but missing 1 of the following... <ul style="list-style-type: none"> • Title of Lab • Date of lab • Lab Partners • Period • Sections of lab 	Has everything labeled... <ul style="list-style-type: none"> • Title of Lab • Date of lab • Lab Partners • Period • Sections of lab
Lab Basics	No purpose, pre-lab, materials, or procedure provided.	Missing multiple parts of the lab or parts are included but all of the detail is missing. <ul style="list-style-type: none"> • Purpose • Pre-Lab Question • Materials • Procedure 	Missing one part of the lab or all parts are included but missing extensive detail. <ul style="list-style-type: none"> • Purpose • Pre-Lab Question • Materials • Procedure 	All parts of the lab are included but some detail is missing. <ul style="list-style-type: none"> • Purpose • Pre-Lab Question • Materials • Procedure 	All parts of the lab are complete with detail. <ul style="list-style-type: none"> • Purpose • Pre-Lab Question • Materials • Procedure
Data Table	No Data Table or example calculation.	Data table partially completed with errors on colors observed and/or distances traveled.	Data table mostly filled in or some errors on the colors and/or distances.	Data table filled in but missing some colors or a distance is not logical.	Data table completely filled in with colors observed and distances traveled.
Diagrams/Pictures	No diagrams or pictures.	Diagrams/Pictures aren't clear or aren't relevant to the experiment.	Diagrams/Pictures are clear but missing information that helps explain the experiment and/or data.	Diagrams/Pictures are clear but missing some detail.	Diagrams/Pictures are clear and help explain the experiment and/or data collected.
Calculations	No calculations included.	Sample calculation or Rf might be missing and there are multiple errors on the calculations.	Sample calculation or Rf might be missing or slight errors with calculations.	Sample calculation or Rf value is missing or incorrectly calculated.	Sample calculation is shown with all Rf values and calculations done correctly.
Questions	No questions answered.	A few questions are answered and/or answered with many errors and with limited detail.	Questions answered with multiple errors and/or lacks details.	Questions answered with slight error and/or more detail could have been provided.	All questions answered correctly with detail.