

Chromatography: lab report assignment



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Reece's yellow, Reece's orange, Reece's brown, pink pen and green pen all appear to contain only one component. . Which colors were consistently composed of more than one color? (15 points) – Green food coloring and blue food coloring appeared to be the only ones consistently containing more than one color. 7. Why does the technique require you to use a pencil to mark the original spotting line? (15 points) – The pencil is used to mark the original spotting line because the lead from the pencil will not move like the colors will, if you used a pen then your original spotting line would move with the color. 8. The solvent in the jar is approximately 1 CM deep, yet the spot on the paper is 1 CM up on the paper.

Why is it important to keep the spots above the solvent? (15 points) – You have to keep the spot above the solvent because if you lay the spot in the solvent it will soak into the solvent as opposed to diffusing up the chromatography paper, keeping it out of water allows the solvent to carry the color up the paper with it as opposed to washing it off. 9. What conclusion did you reach? Were the components of the dyes similar or different? Justify your answer using your empirical evidence. (15 points) – The M and Reece's have about 50% the R_f as the dye's, therefore the components are different, the dye's are much stronger than the foods.

The and Reece's were however, similar to each other, their R_f values stayed in about the same range and the colors there did not move as much as the dye's. The felt tip pens also had low R_f values which I did not expect, I expected them to be in the same range as the dye's. 10. You run a chromatograph of two different food colorings, each consisting of a single substance. One food color (spot X) has a R_f value of 0.350 and the other
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(spot Y) has a R_f value of 0.750. Draw a sketch of the chromatograph.

Include and label in your sketch the origin, the solvent front, and two labeled

spots. (20 points) 11. As the owner of a patented ink for pens, you suspect

that another company has stolen the mixture. How could you use

chromatography to prove they are using the same formula? (20 points) – You

could conduct a chromatography test to separate the mixture they are using

in comparison to yours, this will allow you to see if the components are the

same. You would need to test both mixtures and compare the R_f value

results in order to prove they are using the same formula. 12. Forensic

scientists use chromatography in crime scene investigations.

Give an example of an instance when a forensic scientist would need to use

chromatography. (20 points) – Chromatography can be used in forensic

science in many ways. A forensic scientist could use chromatography to test

substances found at a crime scene to determine the components and decide

what the substance is. Urine dip tests are another very common use for

chromatography in forensic science, a victim's urine, or a suspect's urine for

that matter, could be tested in such a way as to determine the presence of

drugs or other chemicals in the person's system.