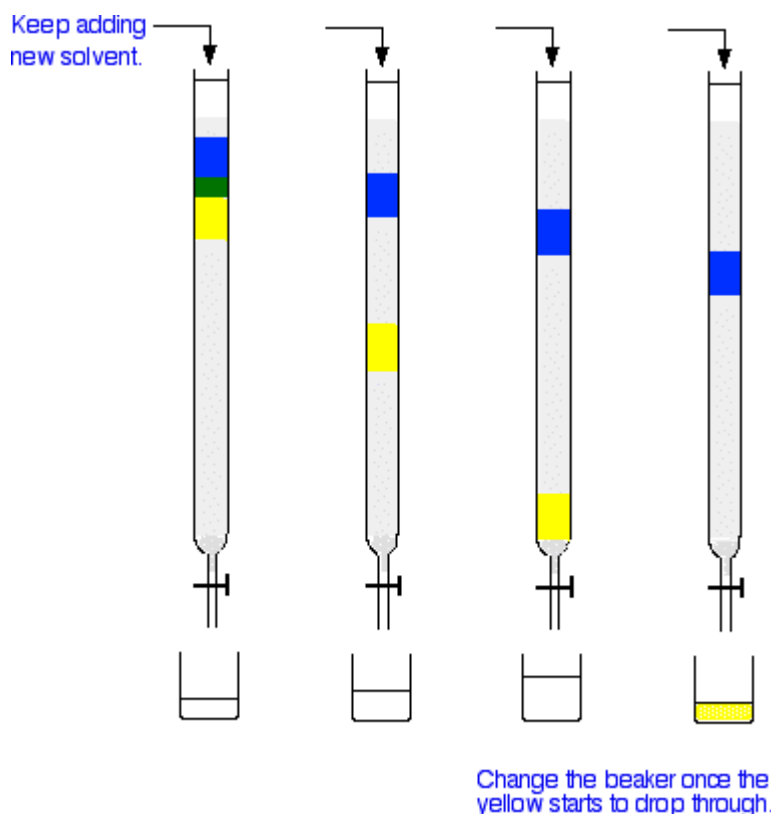


Chemguide – questions

COLUMN CHROMATOGRAPHY

1. The diagram taken from the Chemguide page shows a burette set up for column chromatography and being used to separate a green mixture of yellow and blue dyes. The packing material (the stationary phase) can be either silica gel or alumina. The diagram shows a series of snapshots of the column as time passes.



- a) If you look carefully, there is a slightly darker grey patch just above the tap. What is that, and why is it there?
- b) Explain exactly how you put the green mixture into the column in the first place.
- c) Alumina and silica gel both work in a similar way as a stationary phase. Suggest why the yellow dye moves quickly through the column, whereas the blue one travels much more slowly.
- d) Once the yellow dye has all been collected at the bottom of the column, how might you save time in collecting the blue one rather than just waiting for it to pass slowly through? Explain your answer.
2. The example in question 1 illustrates how you could separate a mixture of coloured substances using column chromatography. Suppose instead that you wanted to use it to remove colourless soluble impurities from a colourless organic compound you had just prepared. How would you collect a pure solution of your compound in the solvent used as the mobile phase?