

GCSE Chemistry B (Twenty First Century Science)

J258/03 Breadth in chemistry (Higher Tier)

Question Set 14

1 Ben uses chromatography to investigate a solid black food dye.

(a) Ben tests the solubility of the dye in three solvents.

Here are his results:

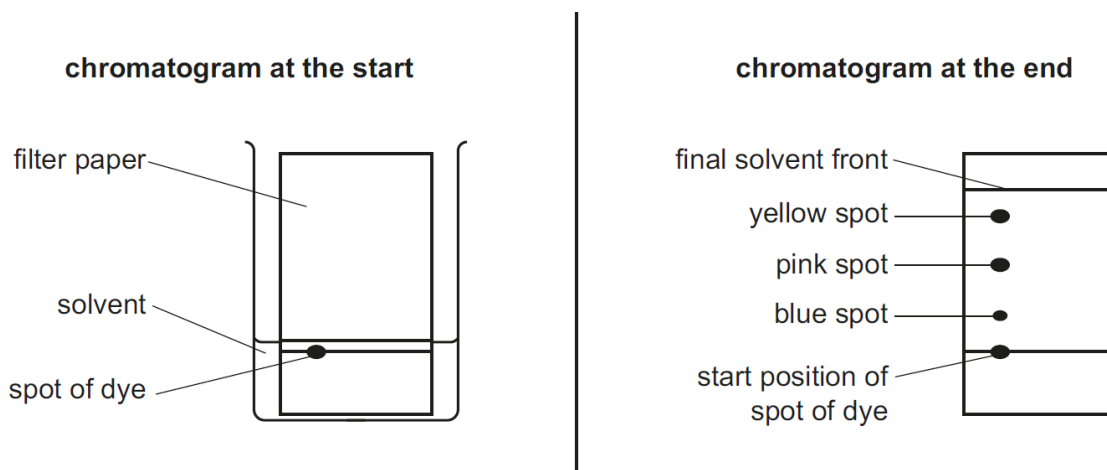
Solvent	Result
water	insoluble
ethanol	insoluble
propanone	soluble

(i) Which of the three solvents are **non-aqueous**? [1]

(ii) Ben uses paper chromatography to investigate the dye. [1]

Which of the three solvents should Ben use in his investigation?

(b) Here is some information about the experiment:



(i) Name the stationary phase. [1]

(ii) What is wrong with the way Ben set up his experiment? Explain your answer. [2]

(iii) Which spot has the greatest R_f value in the chromatogram at the end? Explain your answer. [2]

(c) Ben thinks the dye is a pure substance. Kareem, another student, disagrees. [1]

Who do you agree with?

Explain your answer.

(d) Ben measures the melting point of the dye. [1]

Describe what Ben would see if the dye is pure.

Total Marks for Question Set 14 : 9

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