

CSI: Colours In Ink Experiment

Introduction

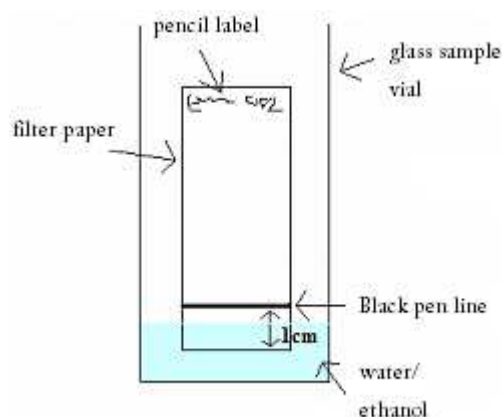
A crime has been committed and it is up to you to solve the mystery! At 17:00 hours, George Bloggs returned home to find that his CD player had been stolen. A ransom note (Evidence No: 080) had been posted through the door of his house, 4 Anystreet, Anytown, demanding a DVD for the safe return of his CD player.

George Bloggs suspected his best friend John Smith or brother, Tim Bloggs, may have been the thief. After a search of both suspects' houses, two black pens were found which may have been used to write the address on the envelope (Evidence No: 081 from John Smith's house and Evidence No: 082 from Tim Bloggs' house).

By separating out the colours found in the black ink of the two pens, it is up to you to solve the crime, by matching the pen found in the suspects' houses with the one used to address the envelope. Can you solve the crime???

Practical

1. Add 1-2ml of water to each of the 3 sample containers and 3-4ml ethanol.
2. Label a piece of filter paper at the top in pencil with the evidence number; 081, and then a separate piece of filter paper with the evidence number 082.
3. Gently draw a line with the black evidence pen, 081 on the "081" labelled filter paper, 2 cm from the bottom.
4. Do the same with evidence no. 082 on the "082" labelled filter paper.
5. Carefully cut around the dotted pencil line on the envelope (evidence no. 080) with the scissors.
6. Place both filter papers and the piece cut from the envelope upright into the vials, as shown in the diagram.
7. Wait at least 10 minutes and examine the colours.



Questions

What has happened on the filter paper?

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Which pen appears to have been used to write the address on the envelope?

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Why do the different compounds become separated by this technique?

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Is this evidence conclusive enough to accuse the owner of this pen?

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